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CORRIGENDUM

Errors in the article by Professor Robert Branner in the October 1960 issue of the *Journal* should be corrected as follows:

Page 92, Col. 2, Line 7: for $\overset{\frown}{ab}$ read ab.

Page 92, Col. 2, Line 8: for cd read $\overset{\frown}{cd}$.

Page 92, Col. 2, Line 9: for $\overset{\frown}{ad}$ read $\overset{\frown}{ed}$.

Page 95, Col. 1, Line 17: for (*b*) read (*d*).

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The Early Work of the Prairie Architects

H. ALLEN BROOKS, JR. University of Toronto

'I well remember', wrote Frank Lloyd Wright while referring to the period of about 1900, 'how "the message" burned within me, [and] how I longed for comradeship until I began to know the younger men and how welcome was Robert Spencer, and then Myron Hunt, and Dwight Perkins, Arthur Heun, George Dean, and Hugh Garden. Inspiring days they were, I am sure, for us all.'[1] In this way Wright described the years which had been so crucial in his architectural development. The decade of experiment and changes in direction which ended with the new century had finally brought his labors to fruition in the form of a personal and mature architecture. Yet this period was not one of solitude for Wright but, on the contrary, a time when several architects shared his interests and worked toward similar goals. His words were indeed accurate when he said 'inspiring days . . . for us all', since he was but one among a growing group of architects who were determined to create a new architecture. It is necessary to understand the rôle played by these men because this loosely-knit group produced a large body of intrinsically notable architecture throughout the Midwest. Furthermore, by understanding them we may more clearly comprehend the early work of Frank Lloyd Wright.

Although the most productive years, both quantitatively and qualitatively, for the prairie architects were just prior to the first World War, it is not this developed phase which I intend to discuss.[2] More important for our immediate purpose was the formative period during the decade before 1902, and here our attention will be focused upon the activities of those architects who have long been all but anonymous, rather than upon the more familiar work of Frank Lloyd Wright.

It was, perhaps, to be expected that certain members of the architectural profession in the Midwest should seek a break with tradition. The *status quo* was being attacked from other quarters as well, and the Chicago environment was one fraught with ideas. The existing social structure was target for a growing literary movement led by Hamlin Garland, Theodore Dreiser, Frank Norris, Eugene Field, and Henry B. Fuller in the nineties, while John Dewey's epoch-making educational reforms were set forth in *The School and Society*, which appeared in 1899. Jane Addams dealt with social problems at a more immediate level, yet in her Hull House one of the earliest Arts and Crafts societies in America was organized,[3] and it was here also that Frank Lloyd Wright delivered his talk on 'The Art and Craft of the Machine'. The name of another midwesterner, La Follette, was synonymous with progressive ideas in government. Thus for the Midwest, more than any other region of the country, the *fin de siècle* represented the age of the progressive spirit, not only in politics but also in other endeavors where men found themselves questioning existing institutions.

Our story takes us back to the period of the Columbian Exposition when two men, both five years senior to Frank Lloyd Wright, began their architectural practice. George W. Maher (1864–1926) and Robert C. Spencer, Jr. (1864–1953) had little in common regarding professional background, yet each in his own way became intimately involved in the quest for new solutions in architectural de-

1. *The Architectural Record* XXIII (1908), 156. This quotation continues, 'Of late we have been too busy to see one another often, but the "New School of the Middle West" is beginning to be talked about and perhaps some day it is to be.'

2. Designs by these men were often referred to in contemporary usage as prairie architecture or prairie houses, a designation which I will employ since it is particularly appropriate. Vincent J. Scully, Jr., in his *The Shingle Style* (New Haven, 1955), called the group the Second Chicago School. While this term has the merit of clearly pointing out the debt owed to the first Chicago School, the terminology becomes somewhat confusing. The use of the word 'prairie', therefore, seems preferable. Although the primary purpose of this discussion is not to define the scope or general characteristics of the work designed by the prairie architects, still the sense of group spirit, of similar objectives, and of distinctive stylistic characteristics will be noted. A more comprehensive analysis would show the validity of speaking of these architects as the Prairie School.

3. *The House Beautiful* III (1897), 29, and XX (1906), 14.

Fig. 1. A. D. Wheeler House, Chicago, by George Maher, 1894 (from *The Inland Architect* XXIV, 1894).

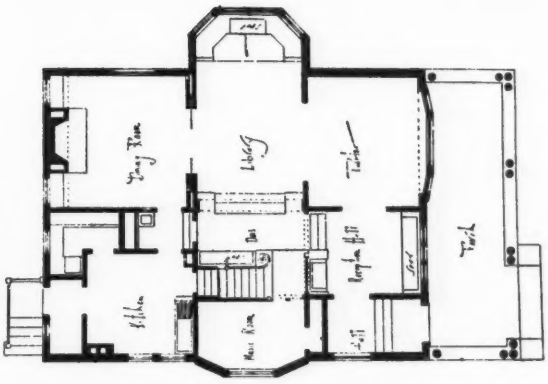

Fig. 2. Plan of A. D. Wheeler House, Chicago, by George Maher (from *The Inland Architect* XXIV, 1894).

sign. George Maher acquired his training in the drafting rooms of several architects, the most notable of whom was J. L. Silsbee. He worked with Silsbee until 1888, after which he entered private practice. Since Wright joined the Silsbee staff in 1887 the young architects would have been acquainted, although they were seldom to see one another in later years.

Early in life George Maher set forth his criteria for architectural design. In a talk before the Chicago Architectural Sketch Club in 1887 he stated that a house should have massiveness and solidity in order to express the idea of substantiality.[4] These characteristics he constantly sought in his own work and thus it may be readily understood why he was a great admirer of H. H. Richardson and Louis Sullivan. Having first passed through a highly romantic phase, Maher's designs became more and more emblematic of the ideas he so often stated in writing. In the A. D. Wheeler House of 1894 we find the interests of the architect clearly expressed, and also we observe the influences which directed him. Maher's former master, Silsbee, was the source of inspiration behind this design (fig. 1) with its shingle and clapboard siding, rough fieldstone base and chimney, and evocation of a non-archaeological colonial spirit.[5] The same year, 1894, Frank Lloyd Wright designed the Bagley House, Hinsdale, Illinois, which was heir to a similar tradition.

A unique opportunity is therefore provided for us to analyze plans by these architects for houses which are

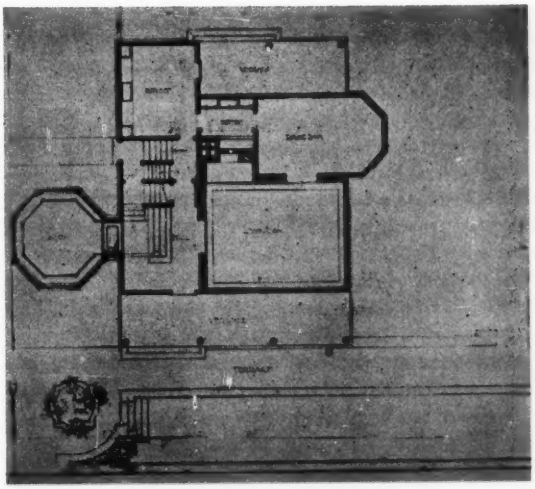

Fig. 3. Plan of Frederick Bagley House, Hinsdale, Illinois, by Frank Lloyd Wright, 1894 (from Manson, *Frank Lloyd Wright to 1910*, courtesy of Grant C. Manson).

contemporary and stylistically similar. A study of the Wheeler plan by Maher (fig. 2), the Bagley plan by Wright (fig. 3), and the Egbert Jamieson House plan by Silsbee (fig. 4), makes apparent the fact that Maher's design is the most open while at the same time the space is arranged to achieve the greatest amount of directional flow. The axis of the parlor, library, dining room is crossed at right angles by the area which extends from the projecting library through the stair hall and into the sun room. Neither the Wright nor Silsbee plans show such openness or a similar

4. This paper was later published in *The Inland Architect* X, no. 4 (1887), 34–35.

5. Some of Maher's other work at this time shows an even closer resemblance to earlier Shingle Style architecture on the east coast, notably that of John Calvin Stevens.

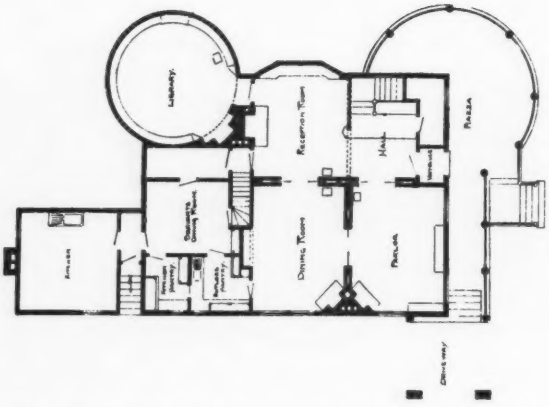

Fig. 4. Plan of Egbert Jamieson House, Chicago, by J. L. Silsbee 1889 (from *The Inland Architect* XXIV, 1895).

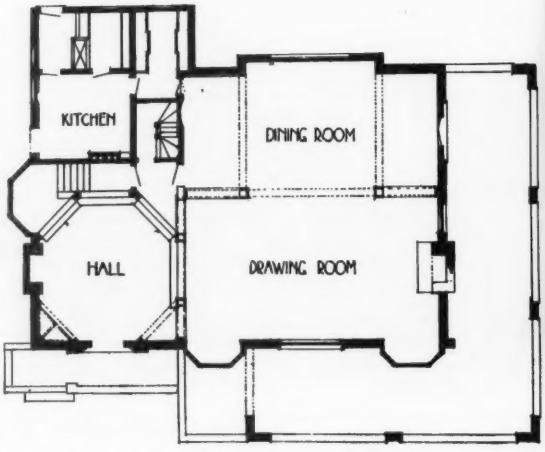

Fig. 5. Plan of W. H. Lake House, Chicago, by George Maher, *c.* 1904 (from *The Inland Architect* XLVI, 1905).

control of spatial flow. This is not to infer, however, that Frank Lloyd Wright's earlier plans had no greater spatial development than his Bagley design, for this would be untrue. One need only compare the plans of his George Blossom or Allison Harlan houses of 1892 to see a spatial organization not unlike Maher's Wheeler House except that, and this is significant, the axial control of the Wright interiors was not as completely evolved. It was not until after 1900 that Wright used a more disciplined space, by which time his plans had spatial relationships far more sophisticated than anything George Maher designed. The latter's interest in opening up the interior reached a high point about 1904 when he completed the home for W. H. Lake in Chicago (fig. 5). No longer was there any semblance of the traditional bounds between rooms, and where demarcations existed they constituted only shoulder-height partitions or bookshelves (fig. 6). Yet by this time there was a profound difference between the spatial organization inherent in the work of the two architects. While Wright's space was sensitively articulated, axially ordered, and overlapping both in the interior design and its exterior extension, Maher had relinquished axial control in favor of a roomy, almost barn-like space which was still rigidly held within the bounds of the walls. In other words Maher had carried 'openness' to the fullest extent possible without breaking into the traditional enclosure of exterior walls. To have done so would have partially destroyed the feeling of solidity that he was so anxious to preserve. Thus Maher and Wright, who in the early nineties shared fairly analogous concepts of interior planning, had, within a decade, progressed to dissimilar positions, yet in all cases the results were advanced in the light of contemporary practice.

Turning our attention once more to the mid-nineties we note that in the years following the building of the Wheeler House, George Maher was to experiment with various architectural solutions which were of notable originality although often weak from an aesthetic point of view. As the culmination of a series of designs Maher finally achieved a result in 1897 which eminently fulfilled the qualifications he had specified ten years earlier.[6]

The John Farson House in Oak Park, Illinois, was massive, impressive, and completely expressed the feeling of substantiality that Maher wished to create (fig. 7). It also evoked those qualities of social position, financial security, and imposing grandeur which the Midwest client desired. Perhaps it was not the most refined or sophisticated architecture, but then these were not the predominant values established by contemporary society. So successful was the design that within a few years architects throughout the Midwest were building dozens of houses based on Maher's Peters or Farson types, and even today they may

6. The design of the Farson House was the outcome of a development that can be traced through the Charles Peters House in Chicago (1895) and the Edgar Barratt House in Kenilworth (1896). Wright's Winslow House was apparently the inspiration for the window placement and the general horizontal massing. It has been said that this and other designs by Maher were entirely dependent upon the earlier Winslow House. Such an interpretation fails to take into consideration the chronological development to be found in Maher's work. Between 1900 and 1904 some of his work was decidedly inspired by the Winslow House, as can best be seen in the projected design for the S. H. Velie House, Kansas City, Missouri, of 1904. Yet the chronology runs from the Peters House of 1895 to the Velie project of 1904, and not vice versa.

Fig. 6. Drawing room, W. H. Lake House, Chicago, by George Maher (from *The Inland Architect* XLVI, 1905).

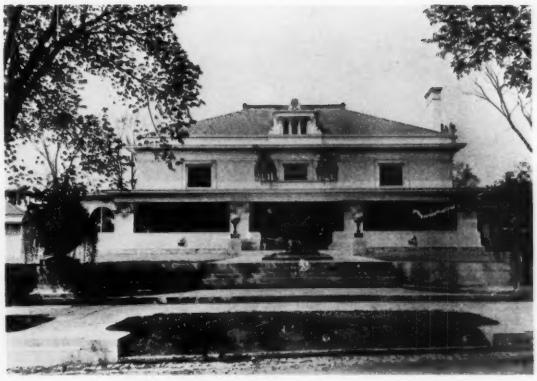

Fig. 7. John Farson House, Oak Park, Illinois, by George Maher, 1897 (from *The Inland Architect* XXXIV, 1899).

be seen in virtually every Midwestern city.[7] The main characteristics of this design were the formal organization of the low rectangular façade, the dominant horizontal established by the heavy roof over the deep porch, and the three stark voids created by the second-story windows. For added monumentality the architect employed Roman brick and cut stone in preference to the timber frame which he had used for the Wheeler House.[8]

Although the architecture lacks any suggestion of historical styles, we are given an indicative insight into contemporary interpretation concerning the meaning of 'style' by two comments which accompanied the publication of the Farson House in *The Inland Architect*. In a statement relating to the particulars of the building it was described as 'a handsome Colonial residence'.[9] While this may sound to us erroneous, such would not have been the case in the 1890s, for at that time the word 'colonial' did not always carry the connotation of historicism that was later to be associated with the term. 'Colonial' merely implied simplicity; the Farson House obviously qualified. The other notation about the building read, 'the architect submits this design as a type for an American style'.[10] Here the idea of an American style is equated with Colonial architecture precisely at a moment when both terms signified a highly creative and non-eclectic design. Thus the dominant trend in future American architecture was already formulated.

Before concluding this discussion of the Farson House, and of Maher's early work, we should observe that neither under Maher nor his followers was this type of design to undergo major variations or refinements in the way that the prairie houses by Wright and other architects did. As a result the houses became tedious and by the early twentieth century Maher began to seek new solutions in his attempt to evolve an American style.[11]

These same years also witnessed the growing strength of the Arts and Crafts movement in the United States. One of the earliest societies was to be organized in Chicago about 1895, although its formal charter was not adopted until 1897.[12] There seems little doubt that the Arts and Crafts was to have an influence on the architects during the ensuing two decades. Even such an anti-joiner as Frank Lloyd Wright became a member,[13] and the profession as a whole welcomed the Society into its midst by allowing them to exhibit jointly with the Chicago Architectural Club at the annual exhibition of 1898. No other group had ever been accorded this honor, and in the minds of many the ideals of the Arts and Crafts and the prairie architects must have been identical. Both advocated simplicity, elimination of excessive detail, and a respect for materials. Furthermore, the typical prairie house was

7. In 1902 the first such design by an architect other than George Maher was published in *The Inland Architect*, and by 1904 they became quite common.

8. The brick was laid in a bond similar to that which Wright used, with no headers, and the stringers overlapping about one quarter length. However, Maher used a sand-colored fire brick, while Wright employed warmer colors.

9. *The Inland Architect* XXXIV, no. 4, 32.

10. *The Inland Architect* XXXIV, no. 4, 32. Maher was dedicated to the idea of creating an American style that would be indicative of democracy.

11. Although Maher succeeded in creating other types, in each instance he proved incapable of making them the basis for free and extensive variations.

12. *The House Beautiful* III (1897), 29, and XX (1906), 14.

13. Other architects who were members were Robert C. Spencer, Jr., Dwight Perkins, and Myron Hunt (from membership list, *Catalogue of the Chicago Architectural Club*, 1898). It is also worth noting that Elbert Hubbard, who founded the Roycroft Shop at East Aurora, N. Y., in 1895, was a native of Illinois.

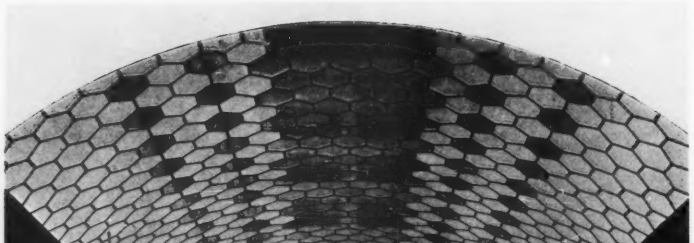

Fig. 8. Interior arcade, project for the American Luxfer Prism Company, by Robert Spencer, 1898 (from *The Inland Architect* XXXII, 1898).

usually furnished with Arts and Crafts products. The Arts and Crafts thus played an important rôle in helping to create an artistic environment which made prairie architecture seem more acceptable to the client.

One architect who figures prominently in our discussion and was both an active member of the Arts and Crafts Society and the Chicago Architectural Club, was Robert C. Spencer, Jr. A contemporary of George Maher's, Spencer was born in Milwaukee, Wisconsin, in 1864. Educated at the University of Wisconsin and at M.I.T., he won the coveted Rotch Traveling Scholarship and spent the years 1891–1893 in Europe. Soon he went to Chicago and following a brief association with Shepley, Rutan and Coolidge, and then R. R. Kendall, he entered into private practice. In 1896 he created the first geometric, and therefore non-Classical, cover design for the Chicago Architectural Club catalogue which set a precedent for the future. This was one indication that the new spirit among the younger architects was soon to be felt within that organization.

In 1895 Spencer established his office in the Shiller Building next to that of Frank Lloyd Wright, thus marking the beginning of a long and intimate friendship between the two men. By 1896 we find Spencer working on projects with Dwight Perkins, and in the following year both Spencer and Wright moved into Steinway Hall where they shared room number 1107 with Dwight Perkins and Myron Hunt.

Thus we have the beginning of a small group which was united by mutual interests, and as time passed more architects began to seek out this congenial atmosphere. Since it was impractical to gather in this manner a luncheon was arranged at which the men could meet and exchange their views. Known as The Eighteen because of the number in attendance, the group was not composed solely of those men we might call prairie architects, but included interested bystanders such as James Gamble Rogers whose work only momentarily showed flirtations with the more *avant-garde* ideas.[14] Some future Prairie School architects were, of course, too young to join the meetings. Apparently The Eighteen helped to catch the imagination of the students, since during the next few years many young men were won over to the cause, something not to be repeated later on. While the luncheons did not continue for a long period of time, their very existence had served to give greater cohesion and direction to the prairie architects.

14. The author discussed this group at some length with Mr. Wright (27 October 1956) who first mentioned The Eighteen in print the following year in *A Testament* (New York, 1957). With the help of Mr. Wright I have only been able to establish the identity of thirteen of the supposed eighteen. They are F. L. Wright, Robert Spencer, Myron Hunt, Hugh Garden, Birch Long, Dwight Perkins, George Dean, Cecil Corwin, James Gamble Rogers, Howard Shaw, Richard Schmidt, Frank Handy, and J. K. Cady.

Although Robert Spencer was an active participant in these groups, it is his work as an architectural designer with which we are most concerned. While he created many fine designs in the period prior to 1902 most remained only as projects, but owing to extensive publicity they became well known to the public.[15] Of these we shall discuss three, a competition entry and two houses.

In 1898 the American Luxfer Prism Company held a major competition for promotional purposes. The specifications stipulated a large office building that would make extensive use of Luxfer Prisms in order to transmit light into inner offices and public areas, yet otherwise gave the architect considerable latitude.[16] The first prize winner was Robert Spencer who submitted a nine-story building in which the most outstanding feature was a magnificent interior arcade.[17]

The clean, sharp lines, the unity of the impressive yet humanly scaled space, and the sensitive handling of the various materials, mark this arcade by Robert Spencer as a design of the highest order (fig. 8). Few designs of comparable quality can be cited in America or Europe at this time. Perhaps the closest parallel would be found in the work of the Sezession in Vienna, and especially the famous Postal Savings Bank by Otto Wagner. Yet the Wagner interior was not designed until six years after Spencer's arcade and also lacked the combination of simplicity and sophistication that the Chicago architect had achieved.

The decoration on the broad spandrels and posts combined geometric with stylized natural forms in a light, thin treatment which was in perfect harmony with the character of the architecture. Although the use of plant forms recalls the Art Nouveau, the precise detailing was closely akin to the later work of the Sezession, while the general tone of the *décor* was entirely independent of the Sullivanesque tradition then more common in the Midwest.

Overhead hexagonal Luxfer Prisms were employed to create a translucent vault to radiate an even light over the arcade which served not only as an inner square for shops but also provided public access to various parts of the buildings. Yet regrettably this project was never destined for construction, a fate so often suffered by Spencer's designs.

In the field of residential design Spencer's work at this time was not as advanced as we might suppose from the Luxfer project. His N. H. Kelsey House of 1898 was far from revolutionary with its Tudor Gothic detail in the stair tower, yet the banded arrangement of the windows and the plain treatment of surface were to combine with the steep roof in a composition of considerable strength (fig. 9).

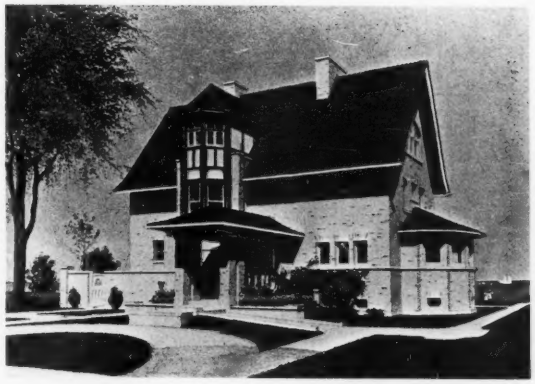

Fig. 9. Project for H. N. Kelsey House, by Robert Spencer, 1898 (from *The Inland Architect* XXXI, 1898).

It was not until the turn of the century that Spencer produced his most notable house designs, and in each case these were commissioned by the Curtis Publishing Company. *The Ladies' Home Journal* published a series of seven between 1900 and 1901 while others appeared in the *Brickbuilder* and *The House Beautiful*. Most significant among these with respect to future developments in prairie architecture was the so-called Shingled Farmhouse presented in the April 1901 issue of *The Ladies' Home Journal* (figs. 10 and 11). Particularly important in this design is the cross-type plan where the major axis, two stories in height, is bisected by the lower wings on either side. The interior space is therefore free to penetrate in several directions simultaneously. Lateral extension is reinforced by the verandas, which also serve to relate the exterior environment with the interior space. This same effect is enhanced by the French doors of the living room as they open on to a terrace which is sheltered by the cantilevered second story.

It will be remembered that Frank Lloyd Wright's Ward Willits House, often called his first mature prairie house, was not built until the following year—1902. When we observe that the Wright design employed the same planning concept of a major and minor cross axis, and also included open porches at the extremities of the single-storied lateral axis, we realize the basic affinity of the two designs.

Admittedly the seeds for Wright's Ward Willits House were already sown in his Kankakee houses (1900), or his own projects for *The Ladies' Home Journal* (1901), yet in none of these designs do we find the plan fully developed or so clearly stated as in the later Willits House which

15. Most of his designs after 1902 were built.

16. *The Inland Architect* XXXII, no. 2 (1898), 15.

17. The judges for the competition as reported in *The Inland Architect* XXXII, no. 2 (1898), 15, were D. H. Burnham, W. L. B. Jenney, William Holabird, Frank L. Wright, and Prof. Henry Crew from Northwestern University. Illustrations of the three winning designs may be seen under the same source.

Fig. 10. Project for a shingled farmhouse, by Robert Spencer, 1901 (reprinted by special permission of *The Ladies' Home Journal*. Copyright 1901 by the Curtis Publishing Company).

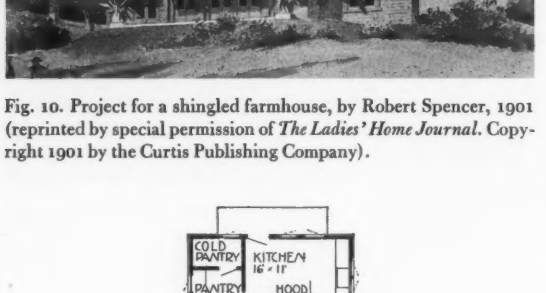

Fig. 11. Plan of project for a shingled farmhouse, by Robert Spencer, 1901 (reprinted by special permission of *The Ladies' Home Journal*. Copyright 1901 by the Curtis Publishing Company).

postdated the publication of Spencer's work.[18] The question of whether Wright could have been the originator, or at least the inspiration behind Spencer, must certainly be raised.[19] The first suggestion—that Wright created this design—may be dismissed since it is impossible to recognize his more subtle and sophisticated hand in the Shingled Farmhouse design. That he was a strong influence, however, would seem a certainty, but this does not preclude the possibility, indeed probability, of a mutual exchange between the two architects, with Wright, as master and teacher, not being insensitive to ideas presented by his contemporary.

18. Grant Manson, *Frank Lloyd Wright to 1910* (New York, 1958), p. 103, suggests that Wright may have been working on the Willits design before the usually assigned date of 1902.

19. That both architects were well informed about each other's work would seem certain, since they were very close friends working in adjacent offices. It should also be recalled that Spencer was the first person to publish Wright's work, in the *Architectural Review* (Boston) of 1900.

Thus at this critical period in Wright's rapidly developing maturity he was not alone among his profession in experimenting with new planning and design concepts, and, after the turn of the century, the number of architects to take up the cause was to increase greatly. One of the younger and more promising of these men was Walter Burley Griffin (1876–1937). Having completed his formal architectural studies at the University of Illinois in 1899 Griffin, an enthusiastic admirer of Louis Sullivan,[20] in seeking a congenial and sympathetic professional environment established his office on the top floor of Steinway Hall where he shared room number 1107 with Robert Spencer and Dwight Perkins. After some months of independent practice Griffin joined Wright's ever-increasing staff where he was to remain for several years.

While thus employed Griffin received a commission from his neighbor William H. Emery to build a house in Elmhurst, Illinois. Although designed in his youth, the house is typical of Griffin's style and also serves as another excellent example of the work being done by the prairie architects.

Designed between 1901 and 1902, the Emery House was conceived as a solid rectangular block with two off-center projecting wings on opposite sides, thereby giving a pinwheel effect to the plan (figs. 12 and 13). One wing is the porte-cochere, while the other encloses the dining room and study at half-levels below and above the living room. These split levels are arranged around a huge fireplace mass which abruptly divides the levels while simultaneously allowing a spatial flow around the chimney and between the various rooms. The staircase, screened from the living room at the bottom, permits a sudden panoramic view across most of the house as one mounts to the upper levels.

The exterior is more formal in composition and the emphasis upon the rectangle tends to belie the freedom of planning to be found in the interior. The house nestles, like an ark, well above the ground, anchored by four massive corner piers.

Although the Emery House, in some aspects, recalls the work of Wright, we should note that the concepts which Griffin expressed, and which are typical of his designs,

20. Most of the architects looked upon Louis Sullivan as the great master and teacher, yet few of them knew him on a personal basis. He was an older, more distant idol, one whose buildings they revered and writings they studied; a man they occasionally saw at public gatherings, but one who did not readily admit to closer relationships.

When Griffin moved to Steinway Hall he occupied the space which was vacated by Myron Hunt who until 1900 was part of the threesome with Spencer and Perkins in room number 1107. At the time of Griffin's arrival Wright had his office in The Rookery, where he had moved in 1897–1898, although by 1901 Wright moved back to Steinway Hall.

were quite different from those favored by the master. Griffin thought in terms of mass, not volume. Containment of form ranked above free-flowing composition and emphasis on wall as surface took the place of spatial penetration. Also the building stood well above the ground rather than being in close harmony with its environment.

Yet the Emery House is but one example of Griffin's work, illustrated here to help focus attention on the richness and variety of the architecture produced during these early years when the Prairie School was just taking form. But the story of Griffin or Spencer was not unique, and later we find their tale repeated in the work of others —architects like George Elmslie, William Purcell, William Drummond, Marion Mahony, or Barry Byrne, to name but a few. These men had something to say, all made their own contributions, and as the years passed the movement gained strength until, on the eve of World War I, the prairie architects represented a major force in the Midwest.

In allied fields there was also increased activity at the turn of the century. The year made memorable by the publication of John Dewey's educational theories witnessed the founding of the Industrial Arts League which had as its avowed purpose the study of the relationship between art and industry.[21] This interest in the problem of coordinating modern technology with the arts was to be the subject—two years later—of the well-known paper by Frank Lloyd Wright on 'The Art and Craft of the Machine'.[22] Thus Wright was giving expression, not to a totally new idea, but to one which was already a concern among his fellow midwesterners.

By 1899 the first European publication recognized the work of a prairie architect when *Dekorative Kunst* illustrated George Maher's J. MacMeans House in its pages, while the following year Robert Spencer accorded Wright his first national recognition in an article on 'The Work of Frank Lloyd Wright' for the *Architectural Review* of Boston.[23] On the theoretical side Louis Sullivan was publishing his 'Kindergarten Chats' which appeared as a series in *The Interstate Architect and Builder* in 1901 and 1902.

While Theodore Dreiser was writing his harsh social commentary about Chicago life under the title of *Sister Carrie*, another, today almost unknown, figure was helping to formulate new ideas about design. This was Joseph Twyman (1842–1904), a native of Ramsgate, England, and a follower of Pugin and William Morris. As a strong

Fig. 12. William H. Emery House, Elmhurst, Illinois, by Walter Burley Griffin, 1902 (photo: author).

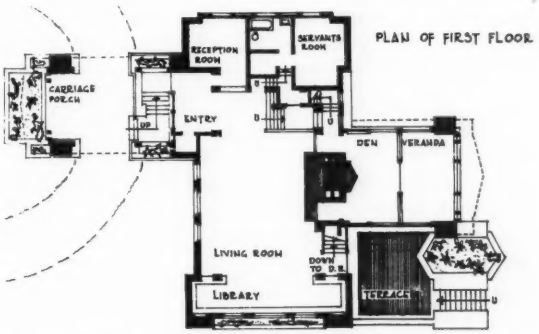

Fig. 13. Plan of William H. Emery House, by Walter Burley Griffin, 1902.

advocate and practitioner of the Arts and Crafts, Twyman formed a direct link between England and the Midwest. Particularly pertinent to our discussion are some of his views about design which are directly related to the objectives of the prairie architects. In a paper read in 1900 before the Chicago Architectural Club, of which he was an industrious member, Twyman set forth as the first two principles that designers must learn, 'that of honesty of construction, [and] the nature of material.'[24] While the first of these recalls many a battle cry of the nineteenth century, the second—the nature of material—truly heralds what has become almost a byword of the twentieth century and synonymous with the work of Wright. Yet

21. Founded at Chicago in 1899, the League was discontinued in 1904, since it was felt that its objectives had either been accomplished or its pioneer work assumed by other organizations. *The House Beautiful* XX (1906), 14.

22. Read at Hull House, 6 March 1901, and later published in the *Chicago Architectural Club Catalogue*, 1901.

23. *Dekorative Kunst* IV (1899), 110, and *Architectural Review* (Boston) VII (1900), 61–72.

24. The paper, read before the Chicago Architectural Club, 18 February 1900, was later published in *The Inland Architect* XXXV, no. 3, 19–20.

Twyman was possibly first among his fellow Chicagoans to give formal expression to this concept as cardinal to good design.

Thus the growing interest in new ideas and new architectural solutions found an ever-increasing audience in the Midwest, and in many ways the Chicago Architectural Club Exhibition of 1902 was to prove an accurate indicator of the realignment of forces. Under the leadership of Robert Spencer, the prairie architects dominated the annual exhibition, and the catalogue of the show stands today as a visual record of the accomplishments of the embryonic Prairie School.[25] The work of Frank Lloyd Wright was given particular emphasis and a special section of the exhibition was reserved for his designs, while a large portion of the catalogue illustrated his entries.[26] It was not a day of unqualified success, however, but only signified an early triumph for the prairie architects who still remained a minority in the profession. This was dramatically demonstrated the following year when the more conservative club members unseated the prairie group from office and prevented their overactive participation in exhibitions for some time.

Yet even during these troubled years, before the Prairie School attained its greatest influence and while younger men were still joining its ranks, the group achieved a notable degree of success. Not only had they begun to produce an architecture marked by originality and a good sense of design, but they had established themselves and their ideals as an important factor on the Midwestern architectural scene and even attained national recognition through the media of publication. But there was a deeper significance, for it was at this time and in the company of these men that Frank Lloyd Wright reached maturity as an architectural designer, and while it is difficult to show specifically what influence the other prairie architects may have had on his development, the fact remains that he did enjoy the benefits of this stimulating environment which later led him to refer to those years as 'inspiring days . . . for us all'—for here kindred souls had worked together determined to create a new architecture for their fellow Americans.

25. In 1902 the president of the Chicago Architectural Club was Robert Spencer, and the jury of admission for the exhibition consisted of Spencer, George Dean, and Richard E. Schmidt. George Dean was also the editor of the annual.

26. Wright exhibited sixty-six pieces (numbers 410–475) which included twelve building designs. Of the fifty-seven pages of illustrations in the catalogue the last fourteen were devoted to Wright's work.

The Philadelphia Centennial Towers

CLAY LANCASTER

THE discussion of a proposed 1000-foot observation tower for the Philadelphia Centennial, in Frank I. Jenkins' interesting article, 'Harbingers of Eiffel's Tower', *Journal of the Society of Architectural Historians* (December 1957), pp. 25–27, raises the question of what, if any, tall structures for viewing the fairgrounds were actually erected for the 1876 exposition in Fairmount Park. Although the first sources of information consulted by the present author failed to indicate the existence of any such phenomena, perusal of the matter soon resulted in two discoveries which prompted further investigation. The first was the silhouette of a tower represented in an engraved view of a fireworks display on Pennsylvania Day (28 September 1876) in Frank H. Norton's *Illustrated Historical Register of the Centennial Exhibition* (New York, *c.* 1879), p. 188; and the second was in *Magee's Centennial Guide of Philadelphia* (Philadelphia, 1876), p. 153, a short verbal description of 'The Sawyer Observatory, Near Belmont Mansion'. The tower pictured was a rectangular fabrication of open framework construction, whereas the Sawyer Observatory was described as 'of iron, tubular in form, 8 feet diameter at base, and 200 feet high'. These obviously were two different structures; and it was found that the first was located on George's Hill, about opposite the Centennial's western gate, at the end of the Avenue of the Republic, whereas the second was on Belmont Hill, to the north of the fairgrounds. Later searching turned up a sketch of the latter at the top of a lithographic panorama of the Centennial Exposition by A. L. Weise,[1] a representation of the former in the background of a vignette of the Pennsylvania Building,[2] and the representation of both towers in a folded, wood-engraved perspective view.[3] These references served to verify the reality of the two observatories, although little additional data came to light. Strangely enough, the *Centennial Portfolio Album* fails to include any glimpse of the towers among its numerous photographic plates; and the official bird's-eye view in the *Album of the International Exhibition at Philadelphia* (New York, 1876, first plate) omits both.[4] No mention is made of them in the United States Centennial Commission's *Grounds and Buildings of the Centennial Exhibition* (Philadelphia, 1878), which gives explicit information about each of the exhibition halls, pavilions, and even the equipment in every public comfort station at the fair. The scarcity of descriptive matter may be explained on the basis of the towers being outside the boundaries of the exposition, whereas exclusion from the pictorial surveys mentioned signifies either that they were considered unimportant, unrelated to the exhibition buildings proper, or perhaps were conceived too late for inclusion in the reviews cited. An appeal sent to the Free Library of Philadelphia brought an additional description of the Sawyer Observatory,[5] and four pictures (figs. 1, 2, 5, 6).[6]

Neither of the towers built could approach in size and magnificence the Clarke and Reeves 1000-foot high project described and illustrated in Frank I. Jenkins' essay. Like the proposed scheme, the Sawyer Observatory was circular, and made of iron; but the similarities end here. The observatory as built consisted of a tapering tube supporting an overhanging wire viewing cage on top (fig. 1). The summit was reached by an elevator, described in *Magee's Centennial Guide* as: 'An annular car, 20 feet in

1. Library of Congress print, reproduced in Oliver W. Larkin, *Art and Life in America* (New York, 1949), p. 241.

2. *The Illustrated History of the Centennial Exhibition, Philadelphia, 1876* (John Filmer, New York, 1876), fig. facing p. 10.

3. *The Illustrated Catalogue of the Centennial Exhibition* (John Filmer, New York, 1876), p. 104.

4. Reproduced in the author's 'Taste at the Philadelphia Centennial', *Magazine of Art* XLIII, no. 8 (December, 1950), p. 294.

5. *Frank Leslie's Historical Register of the Centennial Exposition* (New York, 1877), p. 64.

6. The author wishes to express his appreciation especially to Mrs. Mildred Morgan Seder, Head of the Art Department of The Free Library of Philadelphia, for her generosity in gathering and making available this material to him.

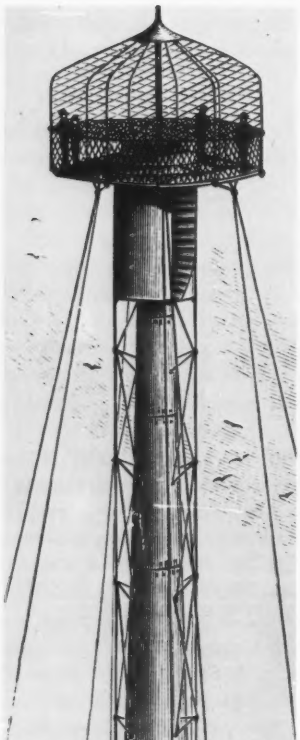

Fig. 1. Sawyer Observatory, Belmont Hill (from *Leslie's Historical Register*).

Fig. 2. Inside the elevator, Sawyer Observatory (from *Leslie's Historical Register*).

diameter, elegantly upholstered' (p. 153). Although the engraving of the tower in the 1877 edition of *Frank Leslie's Historical Register* (fig. 1) depicts the elevator as a plain hollow disk having square windows piercing its circumference at intervals, a more detailed scene inside the elevator, in the same book, indicates that it had a continuous band of perimeter windows set between dado and ceiling (fig. 2). The car was guided in its ascent on perpendicular rods held out on cross bars from the diminishing circular shaft, a cylinder projecting below the platform enclosing a steep winding staircase up which visitors climbed the last lap to the observation cage, the elevator rising only to a position adjacent to the underside of the platform. In the same edition of the *Historical Register* the height of the Sawyer Observatory is given as 185 (rather than 200) feet, and the elevator is said to be absolutely safe, capable of stopping itself on the vertical rods should the eight wire cables that raise and lower it snap (p. 64).

The inventor, for whom this tower was the namesake, was Lemuel B. Sawyer of Charlestown, Massachusetts, who took out a patent on an 'Improved Observatory' in the United States Patent Office on 9 October 1866. His proposed observatory is of the type erected in Fairmount Park, consisting of a 'tower of as small diameter as practical to sustain the necessary weight', and an 'annular car which surrounds the tower . . . guided in its motion up and down by suitable rails attached to the tower, and a suitable hoisting apparatus placed at or near the foot of the tower. . . .' In the accompanying diagrams (labeled 'Fire Escape') the model is represented on a smaller scale than that of the Centennial elevator, and without the stationary observatory on top (fig. 3). The passengers could not leave the car in the prototype version; but since handling vast hordes of spectators at a world's fair was impossible in such a design, this was altered to permit one set of persons to take in the view from the cage while their predecessors were being lowered and a new group brought up to replace them. Also, the Centennial elevator car is proportionally larger in relation to the diameter of the supporting cylinder than in the patent design (fig. 4). There is some confusion over the circular seat in the cross-section drawing of the car, but from the plan (lower left) one assumes that it was meant to have its back against the window wall, just the reverse of the one built at Philadelphia (fig. 2).

Excerpts from the text of the patent throw some light upon the workings of the mechanical apparatus:

> The suspension ropes *c* . . . lead up and over the sheaves *bbbb*, and are attached to a heavy ring, G, within the tower, which serves as a counterpoise to the car. From the lower side of this ring two ropes, *ff*, more or less, lead down to the winding drum, H, by which the car is hoisted. . . .
>
> The winding drum may be made in any of the usual ways, and operated by steam or any suitable power; but, by preference, I actuate the winding-drum by a worm and gear, as being safer than any other mode known to me. The winding mechanism is also to be provided with a shipper for stopping and starting the same, worked by a cord leading through the car, and also worked automatically by the car itself when it reaches the top and bottom of the tower, as is usually done in a hoisting apparatus.

The shaft was to be constructed 'of any suitable material, but, by preference, of plate-iron of suitable thickness . . . to sustain the required weight'. The tower is made stable by the guy wires (marked *d* on the cross section), and the safety of the elevator is assured by four vertical guides (B), the outer edges of which are cut 'in the form of ratchets, to be acted upon by suitable pawls or dogs (not shown) attached to the car, which in case of accident to the hoisting apparatus will engage with the ratchets and prevent the car from falling . . .', the pawls 'operated by springs under the control of the suspension-ropes'. The idea behind the observatory on Belmont Hill, therefore, was in existence about a decade before it was actually used. Apparently the Sawyer Observatory was demolished soon after the close of the fair.[7]

The second tower at the Philadelphia Centennial, on George's Hill, west of the fairgrounds, was a rectangular structure contracting slightly towards the top, consisting of an open framework of slender iron members forming trapezoid modules braced by diagonal rods. Artists' conceptions indicate the tower to have had a single platform at the top, sheltered by a pyramidal roof ending in a flagpole (fig. 5).[8] Photographs, however, reveal it to have had three platforms, one halfway up, a second near the summit, and a third directly over the second, capped by a hipped roof and spire like that depicted in the engravings (fig. 6).[9] An elevator, working on a central perpendicular

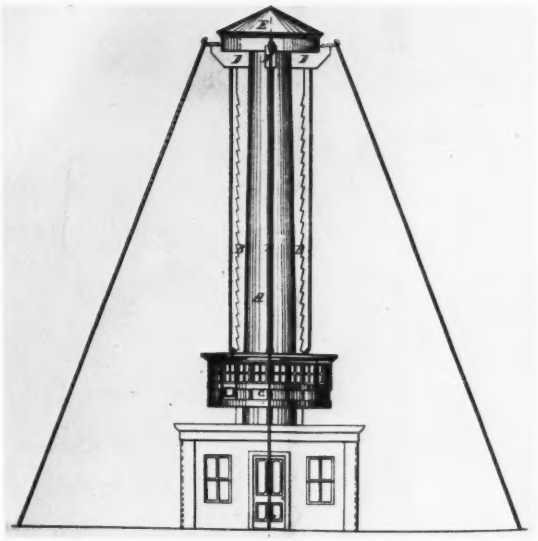

Fig. 3. Elevation for an Improved Observatory, by L. B. Sawyer. U. S. patent number 58,680, 9 October 1866.

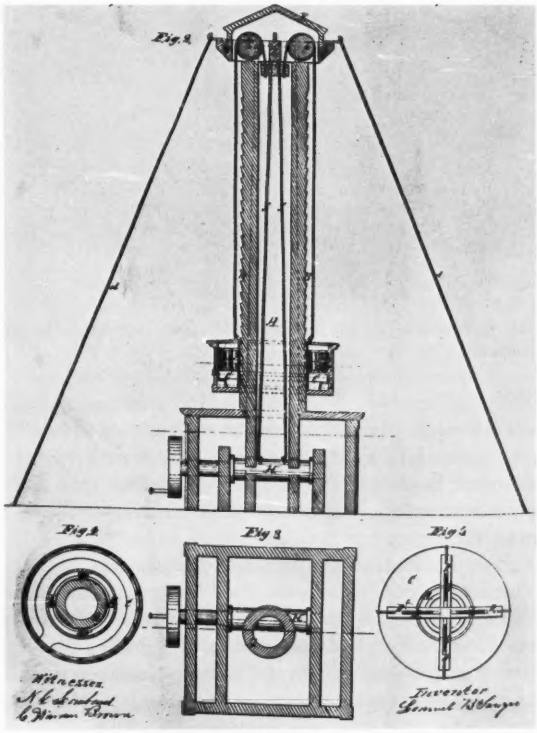

Fig. 4. Cross section and plans for the Improved Observatory, by L. B. Sawyer.

7. No mention of its demolition is made in the Fairmount Park Commission Reports, but it is not listed among the buildings standing in 1878. Letter from Mrs. Frances S. Ballard, Fairmount Park Commission, Belmont Office, 20 June 1958.

8. In addition to the one here illustrated reference is made to the outline showing in the fireworks picture in Frank Norton's *Illustrated Historical Register*, the sketch in the bird's-eye view in *The Illustrated Catalogue* (see n. 3), and in the background of an engraving of the Pennsylvania Building in *The Illustrated History* (see n. 2).

9. Mrs. Seder relates that the Iron Tower on George's Hill appears in the background of a number of Centennial photographs in the picture collection of The Free Library of Philadelphia (letter of 11 April 1958).

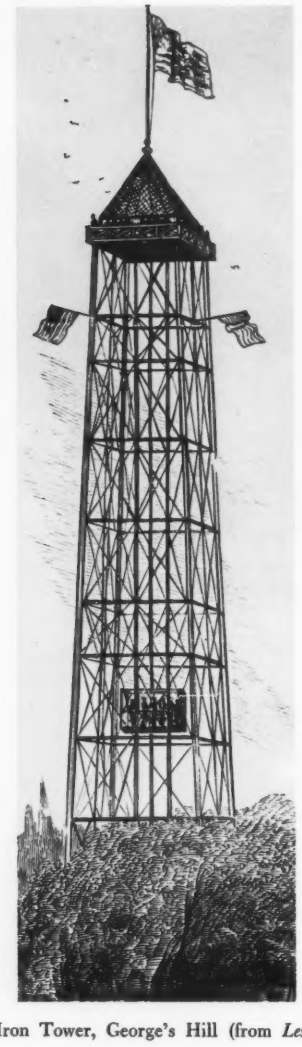

Fig. 5. The Iron Tower, George's Hill (from *Leslie's Historical Register*).

shaft, brought passengers to and from the first and second platforms; and from the latter, if they so desired, visitors could climb narrow stairways to the topmost level. This second example was not as unusual as the Sawyer Observatory.

After the close of the Centennial Exposition the Iron Tower on George's Hill was moved to Coney Island, New York, by Andrew R. Culver, an entrepreneur who created the Prospect Park and Coney Island Railroad by consolidating several smaller lines.[10] The Iron Tower was placed

10. Edo McCullough, *Good Old Coney Island* (New York, 1957), pp. 41–42.

Fig. 6. The Iron Tower from the Missouri Building (courtesy of The Free Library of Philadelphia).

about opposite the Culver Depot on Surf Avenue near West Sixth Street, becoming an added attraction to lure passengers to the famous amusement resort.[11] It was reported to have been 300 feet tall, perhaps an exaggeration. The import from Philadelphia was not the first towering observatory in the New York area. In Manhattan, the Latting Observatory was erected in 1853–1854 on the south side of Forty-third Street, east of Sixth Avenue, in connection with the first American World's Fair held in the Crystal Palace that stood on the site of Bryant Park, a block away. The Latting tower, fabricated of timber braced with iron, was a polygonal construction 350 feet high, with several enclosed platforms at intervals, a steam elevator conducting clients to the first two stages (fig. 7).[12] There were shops in the building around its base. The imposing spire was short lived, being destroyed by fire on 30 August 1856; and the lesser Iron Tower on Coney Island, erected twenty-one years later, at least was without this rival of like kind to overshadow it. The Iron Tower

11. Letter from Mr. McCullough, 21 February 1958.

12. I. N. Phelps Stokes, *New York Past and Present* (The New York Historical Society, New York, 1939), p. 44.

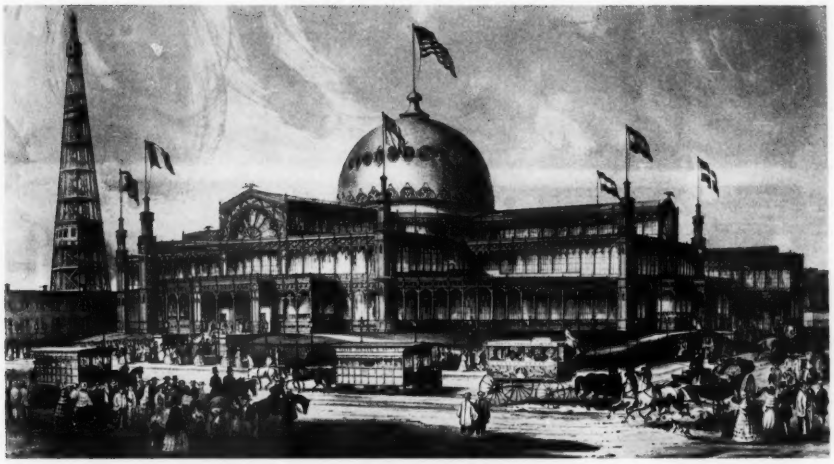

Fig. 7. Latting Observatory and the Crystal Palace, New York. Lithograph by S. Currier, 1853 (courtesy of the Museum of the City of New York).

was the tallest structure on Coney Island until the building of the 375-foot Spanish-mission-type main tower at Dreamland in 1903 (fig. 8).[13] The supremacy of both was threatened by a monstrous round-domed affair, known as 'The Friede Globe Tower', proposed in 1906. The 700-foot freak was pictured with drawings of three other new attractions intended to be presented at Dreamland in a Sunday edition of the *New York Tribune* in April of 1907.[14] However, so far as is known the Friede Globe scheme was not carried out.

The Iron Tower from the Philadelphia Centennial provided patrons with refreshments in the form of soft drinks on the two main platforms, and offered them a telescope that encompassed a forty-mile vista of the ocean and surrounding countryside. Later, after the tower had been acquired by George Tilyou and bore a sign advertising his Steeplechase Park—but was officially closed down—a trio of gamesters ascended it surreptitiously to spy through binoculars at the horse races on the nearby Brighton Beach Track, signalling to confederates to place winning wagers with unwitting bookies.[15] Otherwise, the last years of the Iron Tower were rather quiet. Its swan song was participation in that most spectacular event ever to take place at Coney Island, the burning of Dreamland on 27 May 1911. Dreamland was one of the three big amusement parks on Coney at this time, a competitor to Luna Park and Steeplechase. Workmen, preparing for what was expected to be a bumper weekend, were laboring late spreading hot tar to calk a leak in the artificial Styx of a concession called Hell Gate, when, around 1:30 on that Saturday morning, the light bulbs began exploding, perhaps from the heat of the tar. In the dark someone kicked over a bucket of bubbling tar, and a moment later Hell Gate became a vivid caricature of its name. Leaping flames spread from one lath-and-plaster building to the next, fanned by the wind, and, despite the efforts of more than 400 firemen, who gathered during the next few hours, everything in the blocks south of Surf Avenue between West Fifth and West Tenth Streets was reduced to ashes and molten metal.[16] Included among the casualties was the Iron Tower, the Steeplechase sign having caught fire from the conflagration raging around it. The tower itself met a fate analogous to that of the Latting Observatory fifty-five years earlier, the colossal torch collapsing inwardly in a heap on its own site.

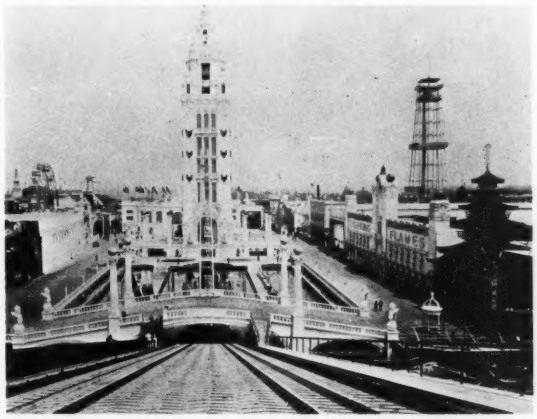

Fig. 8. The tower of Dreamland and the Iron Tower, Coney Island (from J. Clarence Davies Collection, Museum of the City of New York).

13. McCullough, *Good Old Coney Island*, p. 215.
14. *New York Tribune*, 14 April 1907, section II, p. 2.
15. McCullough, *Good Old Coney Island*, p. 226.
16. McCullough, *Good Old Coney Island*, pp. 201–226.

Utopian Aspects of Tony Garnier's Cité Industrielle*

DORA WIEBENSON

THE Cité Industrielle was first conceived as a project for an industrial city by Tony Garnier (1867–1948) in 1899 when he was a student at the École des Beaux-Arts in Paris.[1] When Garnier arrived at the French Academy at the Villa Medici in Rome as a Prix de Rome winner in 1899 he began developing his original concept into a city plan of very wide scope, incorporating the most advanced social and technical ideas of his time. Although the first stage of the project was exhibited in 1901, and the second stage in 1904, Garnier probably continued work on the Cité until the year of its publication in 1917.[2]

Although Garnier's city is not real in the sense that it was not designed for a specific site and was not actually built, it was designed with a specific locale in mind. Garnier, in his preface to the Cité Industrielle,[3] places it in the southeast of France, and relates it in type to some of the real towns of the area. Also, Garnier was appointed as *Architecte-en-chef de la ville de Lyon* by the mayor of Lyon, Edouard Herriot, partly because Herriot wished to transform Lyon into an actual version of Garnier's projected city.[4] Finally, the Cité seems real because of the great detail with which it was thought out. A glance at the site plan (fig. 1) shows the scope of this project.

The Cité Industrielle is composed of the main city and appendages, and is situated on a plateau with high land and a lake to the north, a valley and a river to the south. The main area of the city includes the residences and the public buildings. The public buildings are grouped into three sections; the administrative services and assembly rooms, the collections, and the sports and spectacles. The residential area is composed of rectangular blocks, running east-west, which give the city its characteristic linear form. A main artery connects the station quarter to the city. On the northeast side of this quarter is the old town. South of this quarter is the large metallurgic factory area. Mines related to the factory are on the east side of the river. A silk manufacturing factory is to the north of the old city. Above this area is the source of the city's power —the hydroelectric station and the dam. To the southwest of the dam, and sheltered by the mountains behind it, is the hospital plant. All these major areas are separated from each other by green belts. Small areas are developed for other uses along the river bank and in the plateau territory. Sections of the surrounding region are rendered

Fig. 1. *Cité*).

* A more extended form of this paper was accepted as an M.A. dissertation by New York University in June 1958. Dr. Richard Krautheimer was my advisor during the preparation of the dissertation. The following illustrations were used with copyright permission: figs. 1, 5, 6, 8, 11, 13, 14, 16, 17, from Tony Garnier, *Une Cité Industrielle*, permission M. Louis Weckerlin; figs. 7, 10, permission *La construction moderne*; fig. 9 from Latham, *The Gardens of Italy*, permission Country Life, Ltd.; fig. 12 from Whittick, *European Architecture in the Twentieth Century*, permission Crosby, Lockwood and Son, Ltd.; fig. 15 from *Monuments antiques relevés et restaurés*, permission Éditions Charles Massin et Cie.; and fig. 18 from Wagner, *Die Groszstadt*, permission Anton Schroll und Komp.

1. Louis Piessat, *Tony Garnier; 1869–1948* (Lyon, 1954); and Giulia Veronese, *Tony Garnier; 1869–1948* (Milan, 1948), p. 12.

2. Tony Garnier, *Une Cité Industrielle; étude pour la construction des villes* (Paris, 1917). As the drawings, with a few exceptions, remain undated, it is impossible either to know exactly the manner in which Garnier developed his ideas or to limit his sources either geographically or chronologically. Arnold Whittick, *European Architecture of the Twentieth Century*, 2 vols. (London, 1950), I, 87–88, briefly discusses this problem. The known later additions to the publication are the photographs of Garnier's own house which was built in 1911 (plates 121–122), and the colored perspective sketches of pools which are dated from 1912 to 1917 (plates 81–84). The original perspective drawings of five views of the Cité (Musée des Beaux-Arts, Lyon) are dated 1917, but no dates appear on the publication plates (plates 3–6, and 164). Other possible later additions are the slaughterhouses (plate 156), the surgical building (plates 50–51), and the residential plans (plates 65–132). These do not conform to the 1901 site plan (plate 1) but do conform to buildings later designed by Garnier and constructed in Lyon. However, whatever the date of the drawings may be, their remarkable consistency indicates that any additions after 1904 grew out of the original conception, and did not in any way reflect a change in the philosophy of the work.

3. Garnier, *Cité*, preface.

4. Veronese, *Garnier*, pp. 15, 39.

Fig. 1. First study, Cité Industrielle, by Garnier (from Garnier, *Cité*).

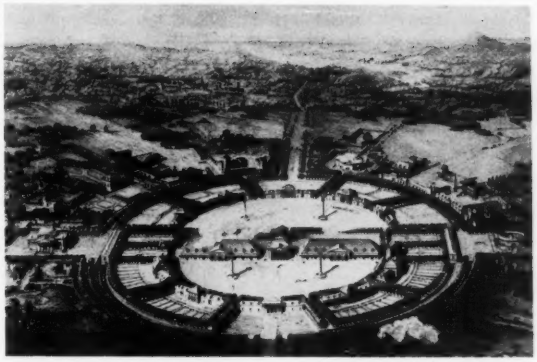

Fig. 2. Plan of the Salines, Chaux, by Ledoux (from Ledoux, *L'architecture*).

as regularly planted fields, indicating agricultural development. As we can see, Garnier has considered all the aspects of a real city, including governmental, cultural, residential, manufacturing, and agricultural facilities.

But the realism of the Cité Industrielle is an ideal realism, falling within the pattern of Utopian schemes previously existing in France. An early example of such a scheme was Ledoux' Salines at Chaux of 1773–1779 (fig. 2). By the turn of the century the scope of Utopian projects was broadened from Ledoux' ideal environment for factory workers to such schemes as Fourier's Phalanstère (fig. 3), which included all types of people in all types of occupations. In the middle of the nineteenth century there was an emphasis on the practical achievement of these ideals, resulting in such projects as Godin's Familistère (fig. 4), based on Fourier's earlier scheme, and in the founding of new cities in remote corners of the world. All these projects were based on a socialist type of government.

Fig. 3. Project for a phalanstery, by Fourier (from Briancourt, *Visite au Phalanstère*).

Garnier's Cité can be placed within the framework of these Utopian schemes. In fact, it is closely related to the early nineteenth-century Utopias. The literary counterpart of the Cité Industrielle, Emile Zola's *Travail*,[5] written contemporaneously with the planning of the Cité, is almost solely based on the early socialist Utopian doctrines of Fourier. Garnier, like Fourier, believed in the basic goodness of man, and when asked why his city contained no law court, police force, jail, or church, replied

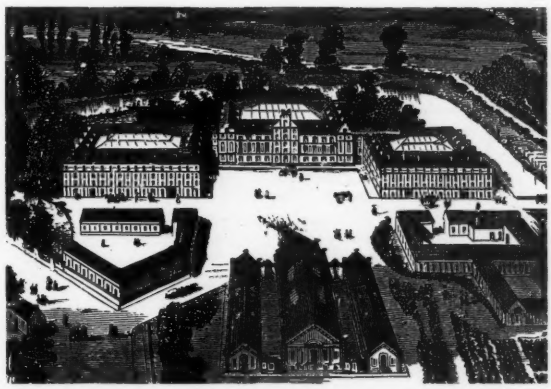

Fig. 4. Project for a *familistère*, by Godin (from Godin, *Social Solutions*).

5. Garnier had already sent his first study of the Cité Industrielle to Paris when Zola's *Travail* was published (Paris, 1901), but he recognized the affinity of his work to Zola's, according to Pierre Bourdeix, 'La Cité Industrielle de Tony Garnier', *La construction moderne* (10 January 1926), 171, and Gabriel Henriot, 'Tony Garnier', *Jardins et cottages* (October 1926), 14. Also, Garnier included in his publication a drawing (plate 15) of the assembly building inscribed with the words 'TRAVAIL / E. ZOLA' (fig. 11, text).

that the new society, governed by socialist law, would have no need of churches, and that, as capitalism would be suppressed, there would be no swindlers, robbers, or murderers.[6] Garnier went beyond the elimination of contemporary social restraints and introduced building types based on socialist tenets in his Cité. Thus employment services and free hostels, as well as the many meeting rooms, were created for the syndicates that such a form of government presupposed. Public facilities were emphasized. Equality of the sexes in education was established. Courts for arbitration were included, substituting for the usual law courts. Public services, such as the slaughterhouses, the flour mills, the bakery, the dairy, and the pharmaceutical products, were placed under the jurisdiction of the administration, and liable to its special dispositions. The administration was also concerned with the regulation of the dam, and thus with electrical output, including heat and light for the city, as well as the more usual functions of street cleaning, etc.[7]

In other aspects Garnier's Cité also compares with Utopian thought. In nineteenth-century Utopias nature, and all types of life related to nature, were considered good. The ideal qualities of fraternity, goodness, and work were assumed to be a fundamental part of man's behavior. Even religion was discarded, and the worship of nature was substituted in its place. Garnier omits churches from his Cité, and, one assumes, substitutes a more 'natural' form of worship, such as that existing in Zola's *Travail*. In a characteristic nineteenth-century parallel of architectural expression with symbolic content, Garnier bases his architectural style on the long horizontals and verticals of the buildings, which, in their simplicity, were to harmonize with natural forms.[8] The consciousness of exercise, health, and physical well-being were corollary to the wakening interest in rudimentary life. Such an expression of Utopian doctrines as Ledoux' Salines stresses the health of the body as well as that of the soul.[9] Garnier's emphasis on sports, seen in the large public area that he devotes to sports and spectacles, has its foundation in this philosophy, which looks backward to a more 'natural' pagan antiquity and its love of games.[10] The greater use of natural

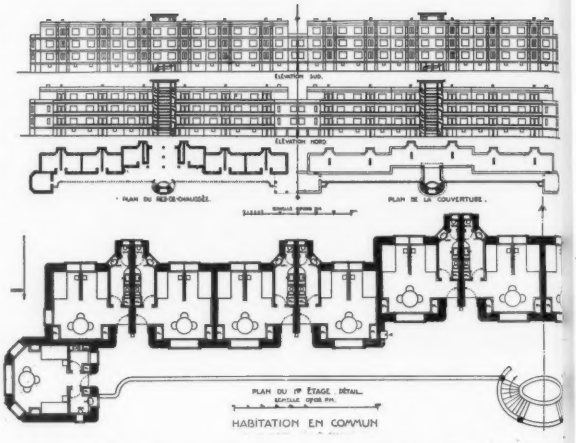

Fig. 5. Project for an apartment house, by Garnier (from Garnier, *Cité*).

settings within planning is another direction that this emphasis on nature took; its ultimate nineteenth-century solutions were in the garden city and Garnier's park-like Cité Industrielle.[11]

However, the individual was not always equated solely with his most primitive state. Early nineteenth-century Utopias, such as Fourier's Phalanstère, were based on the assumption that the highest forms of civilization were as desirable as the most primitive. The Phalanstère, or palace for living, was designed to approximate the living conditions of royalty in accommodations. Fourier deliberately followed the plan of the Louvre so that the inhabitants of his Phalansterè could live like kings.[12] Indeed the inhabitants were better situated than royalty, according to Fourier, because they were more closely related to nature. Later Utopias discarded aristocratic implications in favor of the principle of the basic individualism of each member of society. Garnier expresses this quality in his individual house designs for the Cité. However, the resemblance that has been noted by Pevsner of the open stairwell of Garnier's typical apartment house (fig. 5) to that of Francis 1's at Blois may spring from the revival of the earlier Utopian theories.[13] In Utopias nature was to be improved upon, so that only her better qualities remained. Fourier boasted

6. Bernard Champigneulle, 'Tony Garnier, le premier architecte qui ait conçu la Cité Industrielle', *Le figaro littéraire* (28 February 1948), 5.

7. Garnier, *Cité*, preface.

8. Garnier, *Cité*, preface.

9. Ledoux included a building for physical exercise in his city of Chaux, as well as several temples and a church. Claude-Nicholas Ledoux, *L'architecture considérée sous la rapport de l'art, des moeurs et de la législation* (Paris, 1804), plates 43, 72, 83, and 87.

10. Although Sigfried Giedion, *Space, Time and Architecture*, 5th ed. (Cambridge, 1944), p. 513, note 11, feels that Garnier's emphasis on sports is 'progressive' for its period, at the same time that Garnier's Cité was conceived Patrick Geddes, 'The Closing Exhibition—Paris 1900', *Contemporary Review* (1900), 665, spoke of the 'revival' of the Olympian games in Athens and Paris.

11. However, by the end of the nineteenth century the concept of the city as a park was not a new idea. Trees had been incorporated into city planning since the end of the eighteenth century. Early tree-lined streets, such as the Champs Elysées and the Unter-den-Linden were created in the seventeenth century, and were, as Patrick Abercrombie observes, 'Berlin, Its Growth and Present State', *Town Planning Review* (1913), 222–223, private park features of royalty.

12. Charles Fourier, *Traité de l'association domestique agricole*, 2 vols. (Paris, 1822), II, 38.

13. Nikolaus Pevsner, *Pioneers of Modern Design* (New York, 1949), p. 113.

that even the king had no shelter from the rain when he entered his carriage, while open corridors provided shelter throughout the Phalanstère.[14] Godin, by enclosing the courts of his Familistère with glass, provided sunlit recreation areas in winter months.[15] Les Halles of Second Empire Paris were conceived as an umbrella, protecting against rain and dirt, while allowing sunlight, ventilation, and pedestrian circulation.[16] Following this tradition, Garnier's assembly building has an enormous portico where people could promenade in periods of inclement weather.

But Utopian thinking is composed of two major factors. One factor is the desire for an ideal condition which ignores many of the problems of an existing society; the other is the pervasion of Utopian projects with a realism approaching a presumed condition of actuality, and thought out in great detail. Garnier's Cité Industrielle demonstrates the real as well as the ideal side of Utopian thought. For instance, the necessity for a realistic basis for Utopian thinking caused Garnier's Cité to be related to the politically active French regionalist movement in its general concept rather than to earlier and more abstract Utopian schemes. French regionalism formulated its methodology during the 80s and 90s of the nineteenth century,[17] and at the time of the creation of the Cité Industrielle stood for a preservation of provincial characteristics in France, governmental decentralization, regional universities and museums, local historical monuments and sites, and the encouragement of native arts and crafts, as well as of local industries. Garnier specifically included all of these elements in the Cité Industrielle.[18] The Cité represents one of a federation of cities, with communication and interchange of goods emphasized, and the Cité is a regional city, for local conditions are exploited.[19] Also, local historical and botanical museums, an exhibition building for local expositions, and local schools of arts and industries are included in this project. Local crafts are taught, and two local industries exploit the wealth of natural resources in the area. The deliberate relation of the old town to the station, as if to make a visit for sightseers easier, can also be understood as an interpretation of the regionalist philosophy of the preservation and fostering of interest in local monuments.

Garnier's Cité Industrielle also includes some of the goals toward which regionalism, through actual municipal reforms, was oriented. By the turn of the century municipal reforms placed great emphasis on practicality of expansion and the zoning of the various functions of the city,[20] as well as stringent building laws relating to interior courts and regulating the maximum amount of site to be used for building.[21] Also, the various functions of the city were placed in relationship to each other, so that factories, shipping yards, and railroad stations were removed from the city center and grouped together,[22] while manufacturing cities began to provide trade schools adapted to their local production.[23] The future growth of the Cité Industrielle is carefully stressed in Garnier's preface, though there is no provision for the expansion of the center of the city or for growth of the traffic system, if expansion did occur. The various functions of the city, such as industry, residences, and public, administrative, and hospital quarters are emphatically separated from each other by green belts for independent expansion. They are also related to each other for functional proximity and for ease of transportation. Garnier excels in the organic interrelationship of the various sections of the city, and it is more this factor than any other which has caused him to be accepted as the first twentieth-century planner.[24] Southern orientation for all bedrooms is stressed. It is because of this orientation that the linear character of the Cité is established, for the residences are spread out in an east-west direction in order to provide a southern exposure for these rooms. Light wells are banned, and density and building heights are carefully regulated, not in terms of appearance, but in terms of the establishment of ideal conditions of hygiene. All tall buildings are placed within the station quarter to free the rest of the city, and the park-like nature of the city is achieved by carefully zoning the area of the building on its plot and by providing right-of-ways between buildings as well as banning walls, fences, and other enclosures.[25]

Also, the actual building forms in the Cité Industrielle are related to contemporary practice. The elementary school of the Cité (fig. 6) is similar to a contemporary École des Beaux-Arts project for a school (fig. 7). The covered passageways, a roof garden, and a division of the school into two parts for younger and older children are

14. Fourier, *Traité*, II, 40.

15. André Godin, *Social Solutions* (New York, 1887), p. 232.

16. Giedion, *Space, Time and Architecture*, p. 167.

17. Charles Brun, *Le régionalism* (Paris, 1911), p. 277. The *Fédération régionaliste française* was founded in 1901.

18. Bourdeix, 'La Cité Industrielle de Tony Garnier', p. 171, strongly emphasizes the regional character of the Cité Industrielle.

19. Garnier, *Cité*, preface.

20. According to Abercrombie, *Town and Country Planning* (London, 1943), p. 95, Germany invented the concept of zoning and even the term itself.

21. Thomas Coglan Horsfall, *The Improvement of the Dwellings and Surroundings of the Peoples; the Example of Germany* (Manchester, 1904), p. 65. Horsfall further says (p. 132) that by 1897 in Frankfurt the uncovered part of a site for multiple dwellings had to be considerably more than half the total area of the lot.

22. Albert Shaw, *Municipal Government in Continental Europe* (New York, 1895), p. 303.

23. Shaw, *Municipal Government*, p. 375.

24. *Architectural Review* (April 1943), 90, xxxix; and Giedion, *Space, Time and Architecture*, pp. 512–513.

25. Garnier, *Cité*, preface.

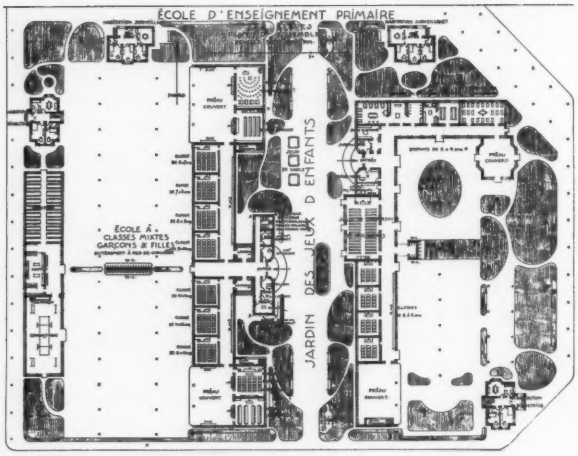

Fig. 6. Project for an elementary school, by Garnier (from Garnier, *Cité*).

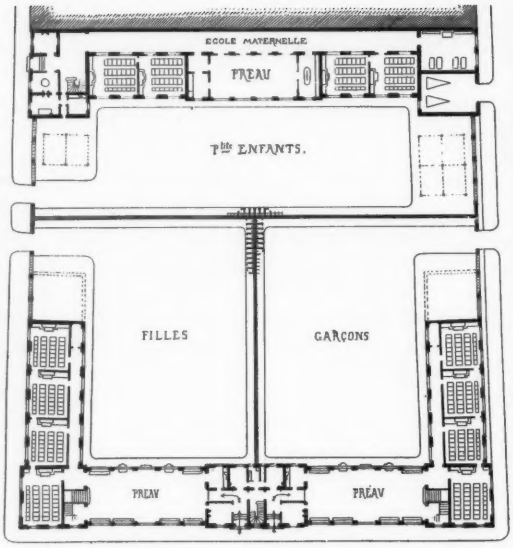

Fig. 7. École des Beaux-Arts competition for a school, by Berger and Maistraisse (from *La construction moderne* 1897).

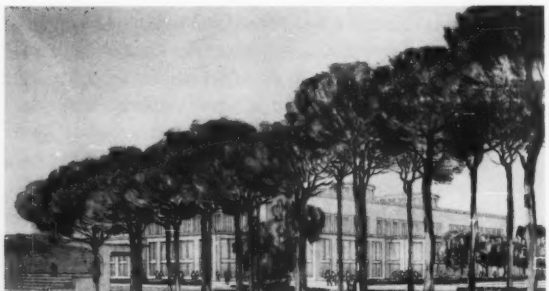

Fig. 8. Project for a stadium, by Garnier (from Garnier, *Cité*).

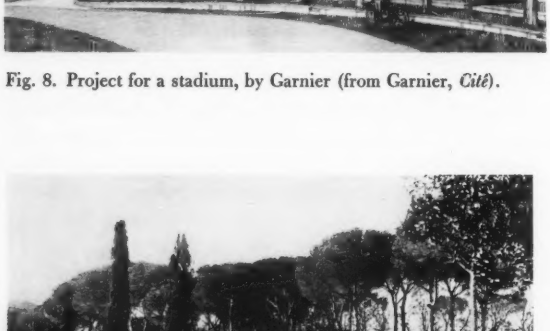

Fig. 9. Amphitheater, Villa Borghese, Rome (from Latham, *Gardens of Italy*).

comparable in both these schemes.[26] The hospital is related to many developed projects containing small, separate buildings connected by tunnels, such as a contemporary project designed at the École by Marcel Prost.[27] Nor was Garnier's reliance on existing building types confined exclusively to French architecture. He adopted elements that he observed while in residence at the Villa Medici. His stadium track (fig. 8) shows a remarkable resemblance to the amphitheater at the Villa Borghese (fig. 9) as well as to a contemporary French hippodrome project (fig. 10). The 'Mediterranean atmosphere' in the Cité Industrielle, of which Giedion speaks,[28] can come only from Garnier's absorption of the Italian manner of life around him while he was at Rome.[29]

Regionalism and civic reforms seem to be solidly attainable ideals. However, in a characteristically Utopian manner, Garnier exaggerates and glorifies realism for its own sake. For instance, he is extremely interested in technical details. Thus all interior walls are specified by him to be smooth with rounded corners, and he emphasizes

26. Other contemporary school projects show a general type similar to that of the Cité Industrielle, though with the classes of boys and girls separated. An example is the Rue Saint Lambert school project, published in *L'architecture* (28 April 1894), i–iv.

27. *La construction moderne* (4 March 1899), 269. Similar hospital projects published in *La construction moderne* were 'Hôpital d'enfants' (19 September 1896), 602–603, and 'Concours de Montpellier asile d'aliénés de l'Hérault' (15 May 1897), 388–390.

28. Giedion, *Space, Time and Architecture*, p. 515.

29. See note 39 for specific Roman influences.

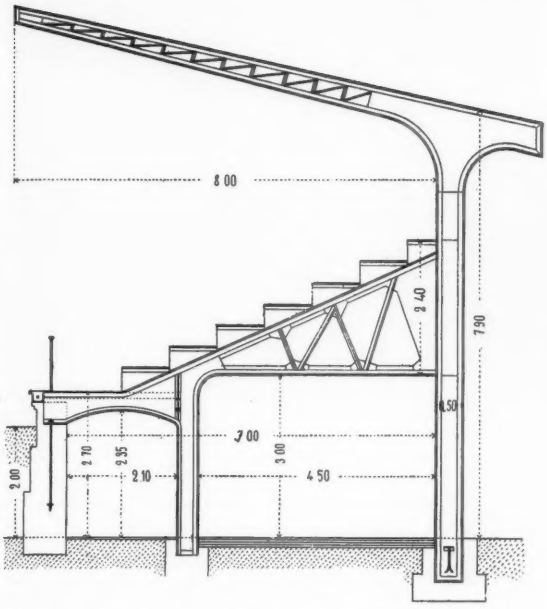

Fig. 10. Project for a hippodrome (from *La construction moderne* 1898).

detailed improvements, such as straight tracks at the station so that the trains can run faster, and a movable stage in the theater so that entr'actes will not be needed.[30]

Indeed, the latest technical developments are basic assumptions in the Cité Industrielle and Garnier relies heavily on them in his design of the city. One important technical achievement of the 1890s was electricity, which occupied a recent and important place in the widening field of architecture and planning, though it was not until the 1900 exhibition that this development assumed a role of primary importance.[31] Electricity was associated with a future mastery of the machine and the emancipation of man from its enslavement; particularly its cleanliness made it attractive to include in cities of the future. The reaction against the dirt and waste of early manufacturing towns placed this advancement high on the list of the nineteenth-century reformer, for whom cleanliness had real meaning. The first installation of a hydroelectric plant at Geneva in 1895 was announced by architectural journals to be the solution to all problems related to electric power; many future installations were predicted.[32] Garnier included a similar hydroelectric plant in the Cité Industrielle.

30. Garnier, *Cité*, preface.

31. Kenneth W. Luckhurst, *The Story of Exhibitions* (London, 1951), p. 145.

32. 'La construction à Genève', *La construction moderne* (26 October 1895), 42.

Fig. 11. Project for an assembly building, by Garnier (from Garnier, *Cité*).

Also, reinforced concrete at this period was of major importance because of its unlimited potentialities. Contemporary publications heralded concrete as the material of the future and idealized its character.[33] As new reinforced concrete systems were advanced, they were caught up and published by the press,[34] which stressed the mysteries of this complex material that would answer all the building problems of the age.[35] Reinforced concrete was easily associated with idealized projects. It was the association of this material with an ideal future state rather than its technical aspect that was uppermost in Garnier's mind when he chose it as the material for his Cité Industrielle. In fact, techniques were so small a problem to him that in his publication of the Cité there are no technical data on concrete, and as representative of the material only several plates of photographs showing concrete buildings under construction, but with no explanatory titles.[36]

Garnier does not follow one system of reinforced concrete for the development of his material, but borrows freely from all systems available to him. The chamfered edges of columns and the post, beam, and joist system of construction used in his assembly building (fig. 11) are important features of the Hennebique system (fig. 12) which must have fascinated Garnier as he watched the erection of Hennebique's buildings for the 1900 Paris exhibition. Baudot's use of simplified concrete tracery in the church of Saint-Jean de Montmartre of 1894 is paralleled in the tracery of Garnier's assembly building, while the

33. A. L. Cordeau, 'Les ciments armés', *Le moniteur des architectes* (April 1899), 25–30.

34. An early series of articles on this subject was written by P. Planat, 'Le théorie des ciments-armés', *La construction moderne* (30 December 1893), 150–153 ff.

35. Anatole de Baudot, *L'architecture; le passé . . . le présent* (Paris 1916), p. 68, compares the possibilities of concrete to the realization of Utopian dreams.

36. Garnier, *Cité*, plates, 151–155.

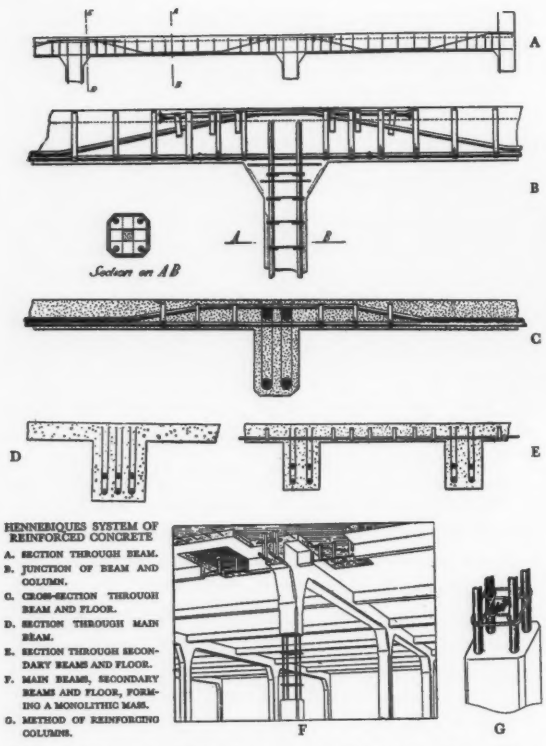

Fig. 12. System of reinforced concrete, by Hennebique (from Whittick, *European Architecture* 1).

Fig. 13. Project for a station, by Garnier (from Garnier, *Cité*).

use of reinforced concrete as a skeletal material containing in its structure its own decoration, an exception to Garnier's philosophy of separate architectural and ornamental forms, and similar to Baudot's use of concrete, is seen in Garnier's station tower (fig. 13). In this tower concrete has a more direct relationship to iron, especially to the expression of this material in the Eiffel Tower.[37] Only in the station and the stadium does Garnier dramatize the lightness and strength of reinforced concrete by using thin members, glass curtain walls, and wide cantilevers.[38] Thus, though Garnier understands the basic cast character of concrete, his emphasis on its technical aspects is superficial, and his exploitation of its possibilities, derivative. In his use of concrete Garnier is sympathetic to all that he observes around him, and eclectic in his borrowings. Especially did Garnier borrow those Roman characteristics of the material that he saw while he was a *pensionnaire* at the Villa Medici. Many of the buildings, such as the bath building, are handled as if concrete were a massive, monolithic material. Also Garnier's dam is related in its scalloped form and its function of a retaining wall to the type of concrete design found in Roman cisterns and in ruined niched walls that could easily have been seen by Garnier.[39]

Indeed Garnier appears to identify himself closely with antique life, deliberately using past forms to symbolize—or recreate—a spirit similar to that in which the forms had originally existed. Thus the general site of the Cité (fig. 14) is reminiscent of the acropolis of such a Hellenistic city as Pergamon (fig. 15). Both have foundation walls towering above the plain, and the Pergamon amphitheater dominates the site in the same manner as does Garnier's dam. Garnier's highway, spanning the declivities of the plain, is closely related in its arched form to Roman aqueducts. Among the buildings, the most specific reference to antique prototypes, and the only one mentioned by Garnier,[40] is the outdoor theater, which borrows the Greek amphitheater form. But several of the other buildings are related to ancient architecture. For instance, the bath building (fig. 16) resembles the symmetrical plan of the imperial Roman thermae[41] with the large calidarium of the main pool placed in the center of the composition. Furthermore, both are divided into three sections, by

37. Veronese, *Garnier*, p. 89, has also noted a resemblance between Garnier's Lyon *abattoirs* and the Galerie des Machines in Paris.

38. It is possible that both Garnier's station and his stadium are to be dated later than the rest of the project (see note 2).

39. Mr. Norman Neuerberg has called my attention to the close relationship of Garnier's dam to the cisterns at Villa le Vignacce, Sette Bassi, Hadrian's Villa in Palestrina, and Cecchignola, as well as substructures to such buildings as the Villa le Cappellette, the Temple of Claudius in Rome, and especially the ruins of the villa known as Muro Torto, very near the French Academy at the Villa Medici. In these examples reverse niches were used as a method of reinforcing against water or earth, similar to the function of the scallops in Garnier's dam.

40. Garnier, *Cité*, preface.

41. Bourdeix, 'La Cité Industrielle de Tony Garnier', p. 171, has pointed out this relationship.

Fig. 14. View, Cité Industrielle, by Garnier (from Garnier, *Cité*).

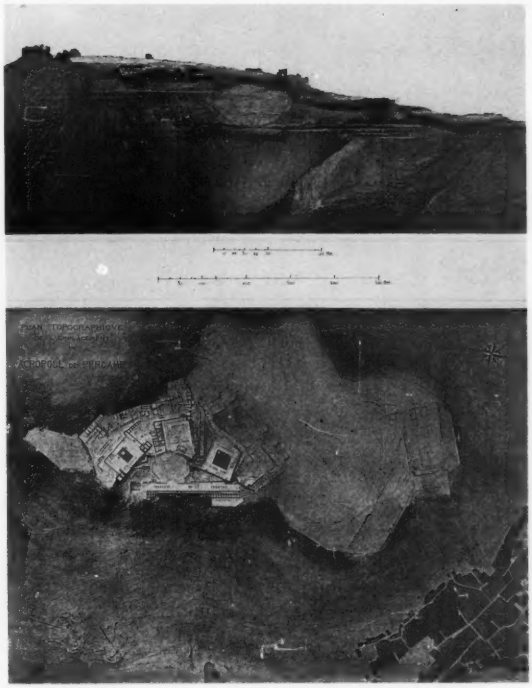

Fig. 15. Present state and reconstruction, Pergamon (from *Monuments antiques relevés et restaurés par les architectes pensionnaires de l'académie de France à Rome* 1).

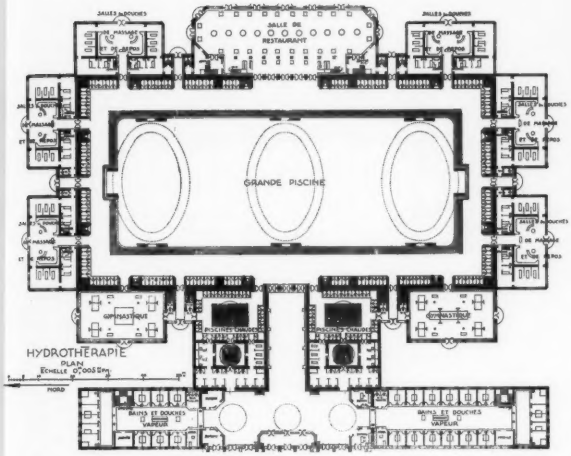

Fig. 16. Project for a bath, by Garnier (from Garnier, *Cité*).

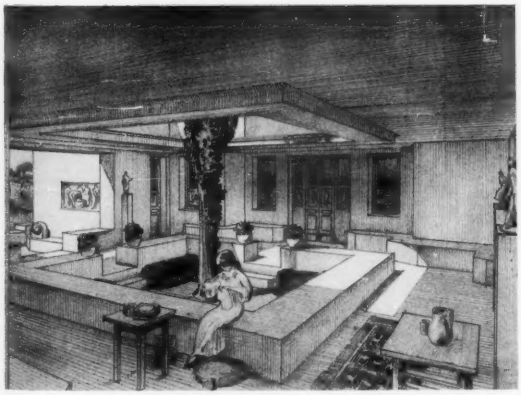

Fig. 17. Project for a residence, by Garnier (from Garnier, *Cité*).

vaulting in the case of the thermae, and by skylights in the case of Garnier's baths. The temporary exhibition building of the Cité is related to the Altar of Zeus at Pergamon, for both are rectangular structures with four stairways along their sides. One house (fig. 17) has a Roman atrium complete with impluvium that could have been borrowed directly from one of the Roman houses of Pompeii or Herculaneum. The use of small fountains, resembling nymphaea, and of enclosed garden areas, has much of the flavor of antique residential sections.

But the relationship to antiquity goes beyond the actual application of classical forms to that of their association with an ideal state. For what Garnier envisions in his Cité Industrielle is a simpler, more Arcadian age. Indeed, the Arcadian concept was expressed in several projects in the 1890s. In Olmsted's landscaping of the Columbian Exposition of 1893 the setting is romanticized, especially in the secluded, natural, and 'sylvan aspect' of the Lagoon, which was an important feature in the conception of the Fair.[42] Wagner's scheme for the remodeling of Vienna (fig. 18), begun in 1898, also has, to a less obvious degree,

42. Charles Moore, *Daniel Burnham; Architect and Planner of Cities*, 2 vols. (New York, 1921), I, 31.

Fig. 18. Project for the reconstruction of Vienna, by Otto Wagner (from Wagner, *Die Groszstadt*).

similar elements in the central municipal area, where a larger rectangular pool in a park is bordered by poplars and covered walkways. The use of the reflective qualities of the pool and the shimmering white of the buildings in both of these schemes, as well as the importance of landscape architecture as a setting for the architectural monuments, is descriptive of the style called by Tunnard the 'Arcadian revival'.[43] This term implies a return directly to antique, and thus to pagan, forms. It also implies a growing interest in the spirit of ancient architecture—in its municipal character, its feeling for beauty as a function meaningful in society, and its utilization of art. And within the context of this revival Garnier's Cité Industrielle becomes especially meaningful. The Cité is an ideal project based on Utopian tenets with Arcadian implications, a monumentally conceived and co-ordinated plan returning in style to antique forms and in philosophy to the antique spirit that are behind the academic tradition.

43. Christopher Tunnard, *The City of Man* (New York, 1953), 308.

The Decorated Headhouse of Torres Straits[1]

DOUGLAS F. FRASER Columbia University

THERE have been no major advances in the study of the indigenous architecture of Melanesia in the past twenty years.[2] Anthropologists, the traditional students of native construction, have turned increasingly to problems of social and intercultural relations, while architectural historians have been reluctant to enter upon what might once have been regarded as the anthropologists' domain. But a far greater obstacle to the scholarly understanding of Melanesian architecture has been the lack of a time scale in Oceanic cultures by which to measure, compare, and relate the existing monuments.[3]

In at least one area of Oceania, valid architectural-historical relationships can be observed and their relative priority determined. This is the island- and reef-studded sea corridor just south of New Guinea known as Torres Straits (fig. 1). The islands of the ninety-mile wide Straits are unique in being the only region where the Negroid horticulturalists of Melanesia come into direct contact with the nomadic Caucasoid aboriginals of Australia. The closer the islands of the Straits are to Australia, the more

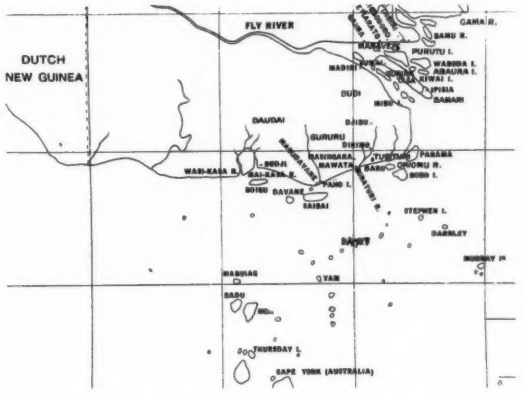

Fig. 1. Map of Torres Straits (from Landtman, *Kiwai Papuans*).

their culture resembles that of the aborigines.[4] Consequently, though they are one people and are of Negroid origin, the Torres Straits natives in their social and economic patterns are sharply differentiated. Culture elements that are of great benefit to certain of the northern islanders may be completely absent a few miles away to the south. Apparently what has happened is that successive waves of influence emanating primarily from the north have reached various parts of Torres Straits and have covered the area to different degrees. The resulting spatial distribution of culture traits is, therefore, an indication of their temporal relationships as well.

Nowhere is this historical overlayer better illustrated than in the *kwikwi iut* or headhouse. This building was unquestionably the outstanding edifice built by the natives of Torres Straits. Unfortunately, on account of mis-

1. I wish to thank Geoffrey Bushnell, Director of the Museum of Archaeology and Ethnology of Cambridge University; B. A. L. Cranstone, Assistant Keeper in the Department of Ethnography, British Museum; Cyril Aldred, Deputy Keeper of the Royal Scottish Museum, Edinburgh; and S. Wolf, Director of the Staatliche Museum für Völkerkunde, Dresden, for permission to publish specimens in their charge. This study was made possible by the award by Columbia University of a William Bayard Cutting Traveling Fellowship for 1957–1958, and a grant in aid from the Museum of Primitive Art, New York. Another version of this paper was presented at the Society of Architectural Historians meeting in Cleveland on 29 January 1959.

2. The last important contributions are those of Herbert Tischner, *Die Verbreitung der Hausform in Ozeanien*, Studien zur Völkerkunde VII (Leipzig, 1934) and Kurt Pieper, *Die Hausformen Melanesiens* (unpublished dissertation, Göttingen University, 1937).

3. The preliterate peoples of Oceania possess an oral history consisting of traditions, genealogies, and tales passed from generation to generation. These are not entirely unsatisfactory for the historian's purposes, but they are uncontrolled. As yet very little archaeological work has been done in this area.

4. For the distribution of various culture traits see A. C. Haddon, *Reports of the Cambridge Anthropological Expedition to Torres Straits*, 6 vols. (Cambridge, 1901–1935), the principal work on Torres Straits.

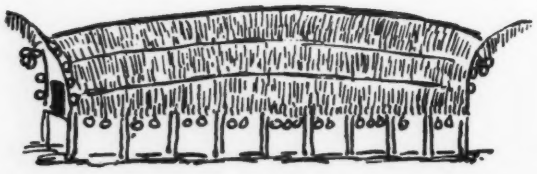

Fig. 2. Headhouse, Mabuiag, drawing by Waria (from Haddon, *Reports of the Camb. Anthro. Exped.*).

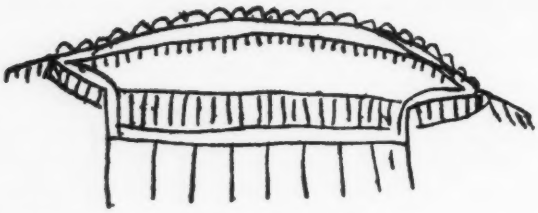

Fig. 3. Headhouse, Mabuiag, drawing by Gizu (from Haddon, *Reports of the Camb. Anthro. Exped.*).

sionary objections, construction of the type has now ceased. First mention of it (the only extant European description) is in the work of the naturalist J. Beete Jukes (1847). Of his visit to the Damut Island, Jukes remarks:

> At the south end of the huts we came to a building much superior to, and different from, any of the rest. It was like a Malay house unfinished, or one of their own smaller huts raised on posts to a height of six or seven feet. The point of the gable was at least fifteen feet from the ground, the roof being supported at each end by two stout posts, about a yard apart, having their tops ornamented by carved grotesque faces, painted red, white, and black, with much carving and painting below. The lower part, or ground floor, of this building was open all round, except at one end, where a broad, rudely-constructed staircase led to a platform, from which went the entrance to the upper story; this was floored with stout sticks and at this end covered with mats; this part was also partitioned off from the other by a bamboo screen. Under the roof hung old cocoa-nuts, green boughs, and similar things.[5]

Further knowledge of the headhouse derives from the work of A. C. Haddon, an ethnologist who visited Torres Straits in the late nineteenth century. In Mabuiag Island, Haddon obtained two crude drawings of the structure and some further data from the older inhabitants (figs. 2 and 3).[6] The term employed for this building in Mabuiag, *kwikwi iut*, Haddon learned, signified not only that it was the principal building of the community but also referred to the reddened skulls and jawbones hung around it. Erected on piles, with doors at either end, the Mabuiag headhouse had projecting gables, a humpbacked roof carried on lateral sideposts, and was decorated with coconut palm fronds.[7] It seems to have served as a storeroom for weapons and heads taken in war and as a meeting place for members of certain clans. Formerly there were two of these houses in Mabuiag, one of which survived until the 1870s when it was destroyed at the instigation of the missionary Samuel MacFarlane.[8]

Haddon believed that the headhouse also appeared in Saibai,[9] and he suggested that the headhouse, as a type, was probably confined to the northwestern islands of the Straits. Other than his speculations, there are no recorded attempts to determine the significance of the decorated headhouse.

In the course of my research into the art of Torres Straits, I came across two works of art in European museums which aroused my interest in this edifice. Figure 4 illustrates a carving obtained by the Dresden Ethnographical Museum from Dr. MacFarlane. It is described in a museum publication as a wooden head from a 'sacred house' in Mabuiag.[10] The other (fig. 5), now in the British Museum and also acquired from MacFarlane, appears in Edge-Partington's *Album* as a wooden mask, although it is obviously not a mask.[11] These two objects are so similar in style there can be no hesitation in assigning them to the same hand. The identical form of these heads further suggests that they may have functioned as a pair. Because of their weathered appearance, both would seem to have served as exterior decoration for the 'sacred house'. With their red, white, and black coloration, moreover, they immediately bring to mind the 'grotesque heads' seen by Jukes. It seems likely, therefore, that the sacred building in question was none other than the Mabuiag headhouse which MacFarlane ordered destroyed.[12]

5. J. Beete Jukes, *Narrative of the Surveying Voyage of H. M. S. Fly*, 2 vols. (London, 1847), I, 163. Tischner, *Hausform in Ozeanien*, p. 28, sees no reason to doubt Haddon's early suggestion that it is a sorcerer's house. But the latter repudiates this idea in his later publications.

6. *Reports*, V, 172, 306, and IV, 98–99. The second drawing is decidedly inferior.

7. *Reports*, V, 172, 306, and IV, 98–99.

8. *Reports*, V, 306, and IV, 98–99.

9. *Reports*, IV, 98–99 merely suggests this, but in Haddon's "The Houses of New Guinea', *Festskrift tillägnad Edvard Westermarck* (Helsingfors, 1912), pp. 23–24, the relationship is definitely hypothesized.

10. A. B. Meyer, *Masken von New Guinea und dem Bismarck Archipel*, Publicationen aus dem Königliches Ethnographisches Museum zu Dresden VII (Berlin, 1889), p. 5 and pl. IV, fig. 2. It is 20 cm. high.

11. James Edge-Partington, *An Album of the Weapons, Tools, Ornaments, Articles of Dress etc. of the Natives of the Pacific Islands*, First Series (Manchester, 1890), pl. 261, no. 3. The error is repeated in *Reports*, IV, 298. This carving is also 20 cm. high.

12. Since several masks are also said to have come from the 'sacred house', its destruction by MacFarlane offers no objection to the survival of the heads. Members of the London Missionary Society were accustomed to sending 'heathen idols' back to their museum in England as evidence of their successful campaigns. The headhouse is the only Torres Straits structure known to have been decorated with carved human forms.

Fig. 4. Wooden head, Mabuiag, now in Dresden Ethnographical Museum, No. 6359 (from Meyer, *Masken*).

Fig. 5. Wooden head, Mabuiag, now in British Museum, +3280 (photo: author).

Fig. 6. Headhouse reconstruction, Mabuiag (drawing by Carl F. Barnes).

Fig. 7. Wooden mask, Saibai, now in Royal Scottish Museum, No. 1885.82 (photo: author).

Limited as the various sources of information are, an attempt at theoretical reconstruction of the Torres Straits headhouse (fig. 6) may be of some value. Jukes' rough measurements give a degree of certainly to the height of the piles, the gable height, and the placement of the two carved heads one yard apart at the tops of the lateral roof supports. The shape of the roof and additional decorations derive from the native drawings collected by Haddon. The size of the door, the width, and length of the house remain uncertain. The door in the reconstruction is two and a half feet wide by four and a half feet high, dimensions arrived at by analogy with those of contemporary dwelling-houses.[13] The width of the building is unknown, but for structural reasons must have been about twelve to sixteen feet. Even more problematical is the length, because this dimension is extremely flexible in Melanesia.[14] Here it is shown as approximately thirty feet.

The carved heads, somewhat enlarged for purposes of clarity, are especially important, for they confirm certain already-suggested relationships. These heads are unlike any other objects carved in Mabuiag. They refer rather to a type of wooden mask made only in the northern island of Saibai (fig. 7). This connection is amply demonstrated by the use of similar color schemes, the employment of analogous facial elements, and the presence of attached human hair. Thus Haddon's supposition of a headhouse in Saibai is confirmed. At the same time, since the form seems intrusive both in Mabuiag and Damut,[15] Saibai must have been the focus of the headhouse type, the complex having been diffused from Saibai to the other two islands in comparatively recent times.

A further problem in the study of the headhouse is the question of the antiquity and history of the type as a whole. This must be gauged by comparing functional, structural, and decorative elements of the headhouse with those of other types of buildings in the vicinity of Torres Straits.

The headhouse seems to combine several architectural and cultural roles. In function it resembles the *kwod* or open meeting place common to Torres Straits in which certain religious and social activities took place.[16] It may also have a vague connection with the cult houses of Yam-Tutu and Aurid Islands although there is not much evidence to go on.[17] As Haddon has already pointed out, the headhouse parallels to a considerable extent the men's house or clubhouse of western Melanesia and eastern New Guinea.[18] At the same time the use of enemy skulls to decorate the building can be found in many parts of south New Guinea, especially among the Marind, Kiwai, and Goaribari peoples. In a coastal village not far from Saibai, for example, Haddon saw skulls used in this fashion under a dwelling house.[19] Yet in contrast with these neighboring types, the decorated headhouse seems to have a more specialized function.

13. *Reports*, IV, 95 ff.

14. Beatrice Blackwood, *Both Sides of Buka Passage* (Oxford, 1935), p. 382, and F. E. Williams, *The Drama of Orokolo* (Oxford, 1940), pp. 4–6. See also Gunnar Landtman, 'Papuan Magic in the Building of Houses', *Acta Academiae Aboensis: Humaniora*, 1:5 (1920), 5–6. I am indebted to Carl F. Barnes, Jr., for his excellent rendering of my conjectural reconstruction.

15. Jukes notes the unusualness of the Damut headhouse in the passage quoted above.

16. *Reports*, V, 308.

17. Except for the masks obtained from the 'sacred' building, there is no published evidence that the headhouse contained effigies or objects of cult.

18. Haddon, 'The Houses of New Guinea'.

19. Discussed in *Reports*, IV, 115–117.

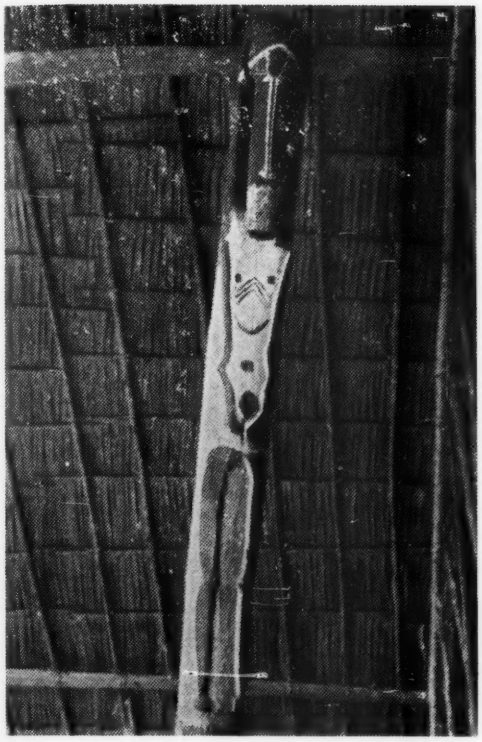

Fig. 8. Carved post, Kiwai (from Landtman, *Kiwai Papuans*).

With regard to structure, there is abundant evidence to show that the method of constructing the headhouse was that typical of south New Guinea.[20] In this vast region, pairs of great posts set up on either side of the centerline support the roof, the surfaces of which are joined not by a ridge pole but by a weighting or thatching beam.[21] Large communal houses based on this mode of construction appear from the western end of the Papuan Gulf to beyond the mouth of the Fly River. The headhouse, while constructed on these principles, seems in size to reflect the smaller or family dwelling such as obtains in Saibai.

The extremely long house of Kiwai and the small Saibai home appear to merge in a type of Mowatta building regarded by Haddon as the possible source of the headhouse.[22] Set on piles six to eight feet high, these dwellings are approximately sixteen feet long by thirteen and a half feet wide. Their humpbacked roofs are about sixteen feet high at the center with the gable peaks a foot or two lower. Haddon suggests further that these Mowatta buildings are essentially miniature longhouses of the Kiwai type.[23] In any case, this Mowatta dwelling type is intrusive in its own village,[24] and it can hardly be the source of the Saibai headhouse, for the latter must have originated within a well-defined tradition. If, as seems likely, that tradition was one of modest sized pile-built dwellings, then it is well to remember that of all the areas of south New Guinea, Saibai shows the greatest development of this type of construction.[25]

The decorative aspect of the headhouse requires considerable analysis. In New Guinea there are only a few areas west of Cape Possession where carved human forms are used as architectural decoration.[26] One is the Kiwai longhouse, the lateral sideposts of which are adorned with full-length figures (fig. 8). These post figures, strange as it may seem, show little connection with the local Kiwai figure style.[27] They refer, rather, to a type of carving made in the interior in the bush country around Dirimo;[28] since the Dirimo figure-type appears also on arrow carvings which are widely traded in New Guinea, the Kiwai people may have learned them from this source. In any case, the Kiwaians have no explanation of the nature or meaning of their post figures,[29] while a good deal is known of the function of the Dirimo figures.[30]

Why should the people of Kiwai employ an alien figure style for the decoration of house posts, which are not normally carved west of Cape Possession? Since they did not invent the ornaments, it seems unlikely that the Kiwai people could have originated the idea of decorating house posts. That the bush people could have stimulated the custom of monumental decoration is highly improbable,

20. See the diagrams in E. Baxter Riley, *Among Papuan Headhunters* (London, 1925), p. 84, and *Reports*, IV, 113, fig. 145. Jukes makes it clear that the Damut roof was supported on lateral side posts.

21. See Gunnar Landtman, *The Kiwai Papuans of British New Guinea* (London, 1927), pp. 13–17.

22. *Reports*, IV, 115–117.

23. *Reports*, IV, 115–116.

24. *Reports*, IV, 115–116, and Haddon, 'The Houses of New Guinea', pp. 21–23.

25. See Haddon, 'The Houses of New Guinea', pp. 20–26, and Tischner, *Hausform in Ozeanien*, pp. 29–31.

26. The Marind Anim sometimes carved figures on the posts of their ceremonial house. Cf. Chicago Natural History Museum unpublished photograph no. 37222, and Paul Wirz, *Die Marind-anim von Holländisch-Süd-Neu-Guinea*, Abhandlungen aus dem Gebiet der Auslandskunde, X, XVI (1922, 1925), II, part 3, pl. 7, and part 4, pl. 7, fig. 4.

27. Landtman, *Kiwai Papuans*, fig. 104 a and b, illustrates two Kiwai carvings used in fertility rites. Fig. 104c, from Daudai, is erroneously described as a Kiwai figure by Landtman. For the correct information see *Reports*, I, 246–247.

28. This figure was collected in the interior of south New Guinea on the Binaturi River. There is another of these figures in the Australian Museum, Sydney.

29. Landtman, *Kiwai Papuans*, pp. 18–21.

30. See notes 27 and 28, and Douglas F. Fraser, *Torres Straits Sculpture: A Study in Oceanic Primitive Art* (unpublished dissertation, Columbia University, 1959), pp. 171–179. The Kiwai people, living at the crossroads of the Fly, seem to have had a highly eclectic art.

Fig. 9 Wooden mask, Tami, now in British Museum, +5882 (photo: author).

in view of the dearth of carved ornament on their rather meager dwellings. A better explanation is that the northern Torres Straits people, starting with their own pile-built domestic buildings, evolved a specialized decorated structure and that the Kiwai people imitated this novel conception, using whatever means were available to them. But unless further evidence is forthcoming, this issue cannot be really resolved.

The historical development of the headhouse outside of its immediate area is also not entirely clear. The underlying idea of a building so sharply differentiated in purpose and decoration from the surrounding houses surely originated in an area far removed from Torres Straits, for this notion is of wide distribution.[31] Interestingly, the heads from the Mabuiag house give some further indication of one of the probable exterior sources of inspiration. The Saibai mask on which these heads are based must be of considerable antiquity, to judge by the variety of its formal interpretations as well as by its influences elsewhere in Torres Straits.[32] Yet masks are almost completely lacking in this part of New Guinea.[33] The closest parallel to the Saibai carvings are the masks of the Tami islanders who live on the other side of New Guinea (fig. 9). The similarity between the wooden masks of these two areas, first noted by the culture-historian Leo Frobenius,[34] is apparent in the eye motifs, the shaping of the face, and in the treatment of the mouth. Identical color schemes and a preference for abstract designs combined with descriptive detail appear in both Tami and Saibai types.

The importance of this linkage lies in the connection it forges between distinct *culture-areas* in New Guinea. The people of New Guinea are usually divided linguistically into an Austronesian and a pre-Austronesian component. This distinction has been extended to include cultural differences as well.[35] The pre-Austronesian group, which is by no means homogeneous, is definitely older in terms of occupation, organization, and technology. The more recent arrivals in the area, the Austronesians, on the other hand, have a more elaborate social system and economy and a superior material culture. Until recently, Cape Possession had been regarded as the limit of Austronesian culture. But Carl Schmitz has shown the presence of Austronesian influence in the dance and cult sites of Torres Straits,[36] and Haddon admits the Straits people also acquired the outrigger canoe from an external source.[37] Now with the investigation of the decorated headhouse completed, there is reason to suspect not merely influence or indirect stimulus but an actual movement of Austronesians into an area regarded as pre-Austronesian.[38] Architectural evidence once again has illuminated the cultural history of an area, while drawing at the same time on that history to achieve a necessary degree of probability.

31. Since this type is widespread in western Melanesia, an area not subject to direct influence from Torres Straits.

32. See Fraser, *Torres Straits Sculpture*, pp. 123–132, 163–168.

33. For an inadequate study of the distribution of the mask types of New Guinea, see A. Riedel, *Die Maske in Neu Guinea* (unpublished typescript, Library of Museum für Völkerkunde, Hamburg, 1929). A few feeble Kiwai masks collected by Landtman are now in Helsingfors. See Gunnar Landtman, *A Guide to the Ethnographical Collection from the Kiwai District of British New Guinea in the National Museum of Finland* (Helsingfors, 1933). The Marind Anim employed simple palm spathe masks.

34. Leo Frobenius, 'Über Ozeanischen Masken', *Zeitschrift für Ethnologie* x (1897), 208, says this implies an ancient connection between the two areas. Other Tami masks employ red triangles in the eye areas in a manner almost identical with those in Saibai examples.

35. Clarification of racial, cultural, and linguistic relationships in this area is badly needed. British and American writers have tended to ignore the problem while most German authors appear to have oversimplified the evidence for purposes of analysis. I am following the lines of approach laid down in Felix Speiser, 'Versuch einer Siedlungsgeschichte der Südsee', *Denkschriften der Schwitzerischen Naturforschenden Gesellschaft* LXXVII (1946), Abh. I, pp. 1–82.

36. Carl Schmitz, 'Balam: Der Tanz- und Kultplatz in Melanesien, als Versammlungsort und mimischer Schauplatz', Die Schaubühne, XLVI (1955), 160–168. I wish to thank Dr. Schmitz for advising me of further Tami influence in Torres Straits which he discovered in the course of a study of Oceanic art. To Paul S. Wingert I extend my thanks for first bringing the question of a possible relationship to my attention.

37. *Reports*, I, 313–314.

38. See the fundamental works: Felix Speiser, 'Über Kunststile in Melanesien', *Zeitschrift für Ethnologie* LXVIII (1936), pp. 304–369; Ralph Linton and Paul S. Wingert, *Arts of the South Seas* (New York: Museum of Modern Art, 1946); and Simon Kooijman, *De Kunst van Nieuw Guinea* (The Hague, 1955), for the various style areas of New Guinea.

AMERICAN NOTES

Fig. 1. Philadelphia, or Merchants' Exchange, unknown artist.

Moved Again!

CHARLES E. PETERSON, *Editor*

As of November 1959 we have been located on the third floor of the Philadelphia, or Merchants', Exchange at Third and Walnut Streets (143 South Third Street), Philadelphia 6, Pa.

The history of the structure is related in Agnes Addison Gilchrist's 'The Philadelphia Exchange: William Strickland, Architect', *Historic Philadelphia, Transactions of the American Philosophical Society*, XLIII, Part 1 (Philadelphia, 1953), pp. 86–95. About 1900 the building was rehabilitated for use by the Philadelphia Stock Exchange under the direction of architect Louis C. Hickman. When that institution moved west to Broad Street, the 'Produce Exchange' moved in, tore off the twin monumental stairways at the east end and converted the space to vegetable stalls.

The building was recently bought by the National Park Service and will become a part of the Independence National Historical Park. The interior was re-modernized last year for office use. Hickman's tholus (a poor copy of William Strickland's original circular turret, adapted from the Choragic Monument of Lysicrates in Athens) has been removed. It will be replaced when the exterior of the building is restored.

The painting of the Exchange illustrated here recently passed through a Philadelphia auction house. Can anyone tell us the name of the artist and the present owner of the picture?

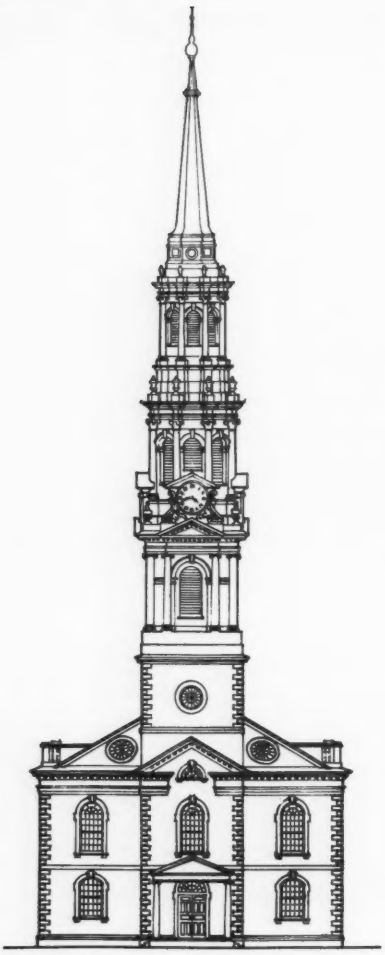

Fig. 1. West elevation (photogrammetric projection), Saint Paul's Chapel, New York (courtesy HABS).

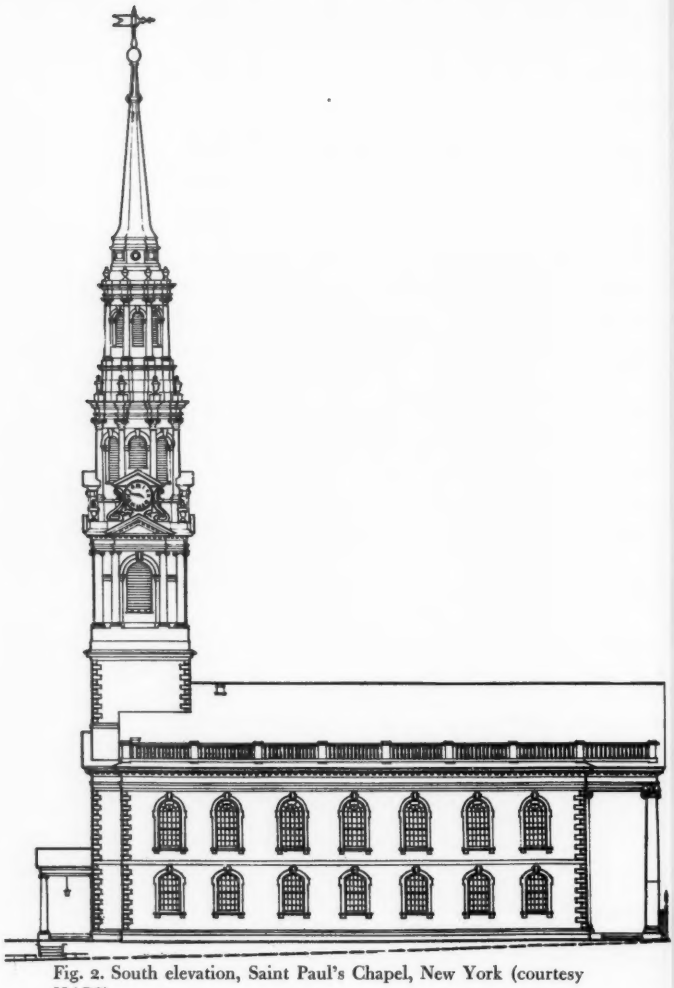

Fig. 2. South elevation, Saint Paul's Chapel, New York (courtesy HABS).

Saint Paul's Chapel Recorded

PERRY E. BORCHERS

Saint Paul's Chapel, the handsome pre-Revolutionary structure serving the parish of Trinity Church on Lower Broadway and Fulton Street, New York City, has just been recorded for the parish and for the Historic American Buildings Survey through arrangements made by Acting Dean James G. Van Derpool of the School of Architecture, Columbia University and the Corporation of Trinity Church. The work was under the expert direction of Professor Borchers, Ohio State University.

Betty J. Ezequelle, Assistant Curator of Maps and Prints, who put up the exhibition of original architects' drawings at the New York Historical Society for the 1960 SAH conference, is the author of 'James Crommelin Lawrence (*c.* 1768–1804), Architect of St. Paul's Steeple, New York', *The New York Historical Quarterly* XLII, no. 3 (July, 1958), 285–299. Figure 1 is an original drawing (one of two) by architect Lawrence which seems to have been a study of detail for the steeple, drawn during construction.

For our earlier report see 'Photogrammetry, the Magic Scaffold', *JSAH*, American Notes (Summer, 1958), p. 27. —Ed.

Last March, Saint Paul's Chapel and Grace Church at Broadway and 10th Street were the two historic New York City structures chosen by the National Park Service for exterior photogrammetric record. A team from the Ohio State University then made a dash from Columbus to Philadelphia, New York City, and the Connecticut River Valley during the interval between academic quarters in Columbus and prepared the field records.

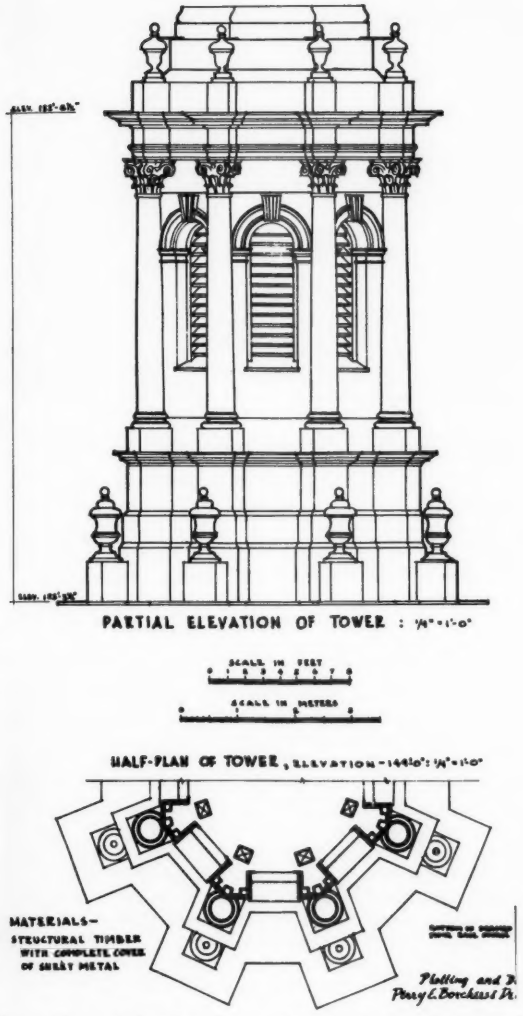

Fig. 3. Plan and elevation of tower, Saint Paul's Chapel, New York (courtesy HABS).

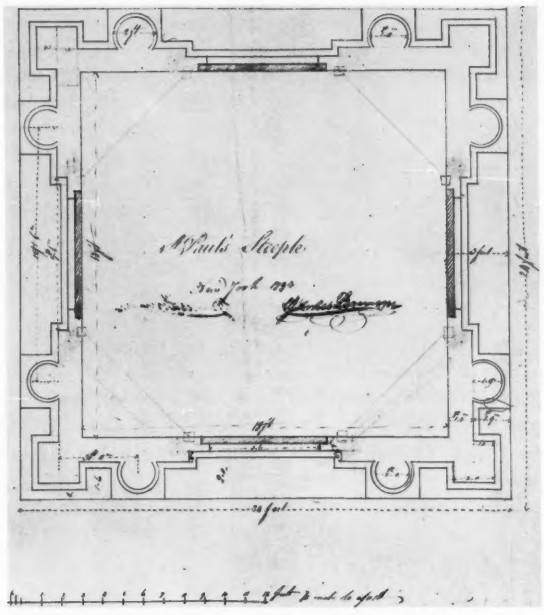

Fig. 4. Plan of first story of tower, Saint Paul's Chapel, New York, signed by James C. Lawrence, 1794 (courtesy The New York Historical Society).

The main body of Saint Paul's Chapel was erected between 1764 and 1766, and the spire and portico between 1794 and 1796. Saint Martin-in-the-Fields, London, by James Gibbs, is believed to have been the inspiration for architect Thomas McBean. Lawrence's steeple was begun and completed in 1794.

Only a record on glass plate stereopairs was first planned for Saint Paul's Chapel. But the Corporation of Trinity Church recognized their lack of drawings of the historic building, which contains among other interesting things the opposing pews of General Washington and Governor Clinton, dating from the time of the Revolution. Through correspondence between architect James C. Massey of the National Park Service, A. Elliott Bates, comptroller of Trinity Parish, Dean Van Derpool at Columbia, Frederick Woodbridge, architect for Trinity Parish, and the writer it was arranged for us to plot and draw the exterior elevations of Saint Paul's Chapel from the photogrammetric plates. In addition, a student team from the School of Architecture, Columbia, was to measure and draw the interior. The cost of plotting, measuring, and drawing was paid for by Trinity Parish, with copies of the drawings going to the Historic American Buildings Survey of the National Park Service.

The Columbia University team, headed by George R. Culver and including Frank B. Hollenbeck and John C. Ziegler, worked from scaffolding within the chapel. Incidentally, on a cartouche above the great Palladian window behind the altar, they discovered a painted-over Hebrew motto which has now been restored in gilt.

At Columbus architect-photogrammetrist Dellas H. Harder and I plotted and delineated six sheets of elevations and inaccessible details of the tower and façades from seven glass plate stereopairs. The total height of the building from the bottom of the dressed stone base course to the top of the weathervane was plotted as 218 ft. 4 in., with an estimated accuracy of plus or minus two inches, or of one part in 1320. The tower of the building, which appeared from the ground to be of stone, when entered to take control measurements proved to be a heavy timber structure with classical wood details completely sheathed in metal. Column bases and a roof, both of earlier date, appeared behind the clock faces halfway up the tower.

The obvious advantages of the photogrammetric technique have since led the Corporation of Trinity Church to commission an exterior record of the church itself (built 1840–1846, by Richard Upjohn). The photographs were taken in September and November 1959, some from Wall Street, while others were taken from camera positions on Broadway, in the churchyard, and from the twenty-third floor parapet of 74 Trinity Place, just outside the office window of Robert T. Gregory, assistant to the comptroller of the church. Eight sheets of exterior elevations and details are now being plotted and delineated at Ohio State University. These drawings will be copied into the Historic American Buildings Survey.

The addition of these new drawings to the body of material on historic American architecture is a fortunate result of the appreciation and concern of the Corporation of Trinity Church for the fine structures which are in their care.

Fig. 1. Model Residence for a Physician. 'One of the simplest of all forms—the parallelogram—furnishes the basis of this design. But little beauty exists in a structure erected on this plan; yet the hands of a skillful designer may do much toward redeeming it from the repulsive baldness which is too frequently exhibited, even in the better classes of country houses.' Estimate, $3,000 (from Sloan, *Homestead Architecture*, 1861).

A Sloan Check List, 1849–1884

HAROLD N. COOLEDGE, JR.

Samuel Sloan (1815–1884), Philadelphia architect, author, and publisher, had one of the most remarkable practices of his day. We here present a list of his buildings by Professor Cooledge who is completing a major study for the Department of the History of Art, University of Pennsylvania. Any further information readers can supply should be addressed to him at the School of Architecture, Clemson College, Clemson, South Carolina.

In this department we have published only an excerpt 'How to Restore Mount Vernon', American Notes (December 1951), from Sloan's *Architectural Review and Builders' Journal* for August 1868, and a note on floor plans for 'Longwood', Dr. Haller Nutt's great oriental fantasy near Natchez, American Notes (March 1955) (fig. 5). Sloan's magazine in its first issue (July 1868) stated: 'We intend to afford a medium for the inter-change of thought and taste throughout the profession, but not for the settlement of disputes'. It was published on the second floor of a building (now destroyed) at 152 South Fourth Street, Philadelphia. The last issue we have seen was that for June 1869. We haven't heard what finally happened to this publishing effort, the first of its kind in America.

A number of Sloan's executed designs are here reproduced—mostly from his own publications. —Ed.

Documentation of the life and work of Samuel Sloan has been hindered by the almost total lack of any Sloan papers—personal or professional. For example, despite the kind help of many individuals and organizations, the writer has been able to identify only thirteen of the thirty-two hospitals for the insane accredited to Sloan by two obituaries. The same situation pertains in the case of residences, churches, and particularly, schools; that is, the number of firm documentations is far less than the total number of buildings given to Sloan by contemporary sources. The following check list is, therefore, incomplete, and any corrections or additions to it would be greatly appreciated by the writer.

I. Public Buildings (restricted to any structure—other than hospitals or schools—which was commissioned by public officials and paid for out of public funds).
1. Courthouse and Jail, Media, Delaware County, Pa., 1849
2. Courthouse, Lancaster, Lancaster County, Pa., 1852
3. Courthouse, Camden, Camden County, N. J., 1852
4. Courthouse, Greensburg, Westmoreland County, Pa., 1853
5. Jail, New Castle, Del., about 1857
6. Courthouse, Williamsport, Lycoming County, Pa., 1860
7. State Exposition Buildings, Raleigh, N. C., 1883
8. Governor's Mansion, Raleigh, N. C., 1883–1884

II. Civic Buildings (restricted to buildings erected by private funds but open to the public, or a major segment of it).
1. Odd Fellows Hall, West Philadelphia, Pa., 1851
2. Fulton Hall, Lancaster, Pa., 1852
3. City Literary Institute for Young Men, Philadelphia, Pa., 1853
4. West Philadelphia Institute, West Philadelphia, Pa., 1853
5. Odd Fellows Hall, Spring Garden, Philadelphia, Pa., 1853 (1851?)
6. Masonic Temple, Philadelphia, Pa., 1853 (fig. 9)
7. Horticultural Hall, Philadelphia, Pa., 1866

III. Schools and Colleges.
A. Public Schools.
1. North East Grammar School, Philadelphia, Pa., 1851
2. South West Primary School, Philadelphia, Pa., 1851
3. Warner Primary School, Philadelphia, Pa., 1851
4. Watson Primary School, Philadelphia, Pa., 1851
5. Haddington School, Philadelphia, Pa., 1851
6. Lyons Secondary School, Philadelphia, Pa., 1851
7. Wood & West Streets School, Philadelphia, Pa., 1851
8. Filbert Street School, Philadelphia, Pa., 1852

Fig. 2. A Southern House. 'The entire design is similar in most of its features to plans prepared by the author for J. S. Winters, Esq., of Montgomery, Alabama' (from Sloan, *The Model Architect*, 1862).

Fig. 3. A Suburban Villa. '. . . a residence in the Italian style, lately erected near Philadelphia' (from Sloan, *The Model Architect*).

9. Shunk School, Philadelphia, Pa., 1852
10. George Wolfe School, Philadelphia, Pa., 1852
11. John Quincy Adams School, Philadelphia, Pa., 1852
12. Webster School, Philadelphia, Pa., 1852
13. The Normal School (after 1859 Girl's High School), Philadelphia, Pa., 1852
14. The Philadelphia High School (or Central High School), Philadelphia, Pa., 1852–1853
15. Henry Clay School, Philadelphia, Pa., 1853–1854
16. Manayunk School, Manayunk, Philadelphia, Pa., 1854
17. James Pollock School, Philadelphia, Pa., 1854–1855
18. Fayette School, Bustleton, Philadelphia, Pa., 1854–1855
19. Tasker School, Philadelphia, Pa., 1866
20. Reynolds School, Philadelphia, Pa., 1866
21. Morris School, Philadelphia, Pa., 1866
22. New Bern Graded School, New Bern, N.C., date unknown

B. Private Schools.

1. West Jersey Academy, Bridgeton, N. J., 1851–1852
2. Swarthmore College, Delaware County, Pa., 1857–1868
3. Memorial Hall, University of North Carolina, Chapel Hill, N. C., 1883–1884
4. Gymnasium and Ballroom, University of North Carolina, Chapel Hill, N. C., 1884

IV. Medical Buildings and Orphanages.

A. Hospitals for the Insane.

1. Alabama Insane Hospital (now Bryce Hospital), Tuscaloosa, Ala., 1851–1860
2. Western State Hospital, Hopkinsville, Ky. 1854–1864
3. Kalamazoo State Hospital, Kalamazoo, Mich., 1854–1859
4. Department for Males, Pennsylvania Hospital for the Insane, Philadelphia, Pa., 1856–1859
5. New Jersey State Lunatic Asylum, Trenton, N. J., additions 1855–1863
6. Central Indiana Hospital for the Insane, Indianapolis, Ind., Men's Department, 1866, and Women's Department, 1875
7. The General Hospital for the Insane of the State of Connecticut, Middletown, Conn., 1867–1868
8. St. Peter State Hospital, St. Peter, Minn., 1867–1868
9. Morris Plains Division, New Jersey State Hospital, Greystone Park, N. J., 1872–1876
10. Blockley Almshouse, Philadelphia, Pa., two wings to the Insane Department, after 1870

Fig. 4. A Norman Villa, 'Eastwick'. 'This Villa was designed originally for A. M. Eastwick, Esq., and is now nearly completed at a cost of about Thirty thousand dollars.' Next to Bartram's Gardens on the west bank of the Schuylkill below Philadelphia (from Sloan, *The Model Architect*).

11. Western State Asylum for the Insane, Morganton, N. C. 1875–1884
12. State Hospital (later Insane Asylum of North Carolina), Raleigh, N. C., additions about 1875
13. South Carolina State Hospital for the Insane, Columbia, S. C., 'Centre Building', 1883–1884

B. General Hospitals.

1. Hospital of the Protestant Episcopal Church in Philadelphia, Pa., 1860–1874
2. The Municipal Hospital for Contagious and Infectious Diseases, Philadelphia, Pa., 1860–1865

C. Orphanages and Training Schools.

1. Northern Home for Friendless Children, Philadelphia, Pa., 1854
2. Pennsylvania Training School for Feeble-Minded Children, Middletown, Pa., 1857–1861

V. Churches and Church Buildings.

A. Churches.

1. Ebenezer M. E. Church, Philadelphia, Pa., 1851
2. First Baptist Church, Germantown, Pa., 1852

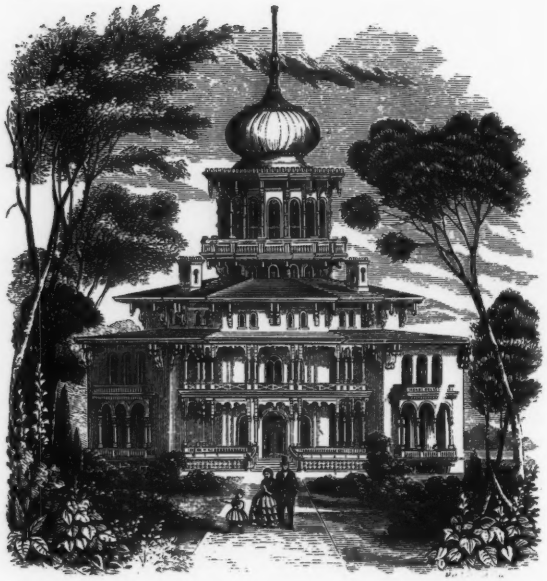

Fig. 5. Oriental Villa, 'Longwood'. '. . . particularly suitable for the home of the retired Southern planter. . . . The occupants of such a residence are not only supposed to be wealthy, but fashionable people. . . . A residence, after this design, is now being erected for a gentleman in the vicinity of Natchez, Mississippi. . . .' Estimate, $40,000 (from Sloan, *Homestead Architecture*).

Fig. 6. Joseph Harrison House, 221 South 18th Street, Philadelphia (East Rittenhouse Square), built 1855–1857, and considered the most expensive and luxurious in the city of Philadelphia until the twentieth century. This house was subsequently occupied by the Stotesbury family (from *Philadelphia and Notable Philadelphians*).

3. Second Baptist Church, Southwark, Philadelphia, Pa., 1853
4. Zion Episcopal Church, Kensington, Philadelphia, Pa., 1853
5. Scotch Associate Presbyterian Church, Philadelphia, Pa., 1854
6. Protestant Episcopal Church of the Saviour, West Philadelphia, Pa., 1855
7. Episcopal Church of Our Saviour, Philadelphia, Pa., 1855

7a. Leigh Street Baptist Church, Richmond, Va., 1856

8. St. James, The Greater (Episcopal), Bristol, Pa., 1857
9. Emmanuel Episcopal Church, Holmsburg, Pa., 1857
10. First Presbyterian Church, Southwark, Philadelphia, Pa., 1857
11. First Baptist Church, West Chester, Pa., before 1857
12. First Presbyterian Church, Kensington, Philadelphia, Pa., 1857
13. First Baptist Church, Greenville, S. C., 1857
14. First Baptist Church, West Philadelphia, Pa., 1860
15. Episcopal(?) Church, Lehigh Ave., near Front St., Philadephiai, Pa., 1860
16. Third Presbyterian Church, Pittsburgh, Pa., 1865
17. Bethany Presbyterian Church, Philadelphia, Pa., 1866
18. West Presbyterian Church, Bridgeton, N. J., 1868
19. Chapel of the Calvary Presbyterian Church, Philadelphia, Pa., 1869
20. Baptist(?) Church, Warrenton, Virginia, date unknown.

B. Church Buildings.

1. Tabor Mission Sabbath School and Chapel, Philadelphia, Pa., 1857
2. Theological Seminary of St. Charles Borromeo, Overbrook, Pa., 1866

VI. Commercial Buildings.

1. Four Stores, corner of 9th and Spring Garden Sts., Philadelphia, Pa., 1851
2. 'Simes Block', 12th and Chestnut Sts., Philadelphia, Pa., 1851
3. Store, 103 Walnut St., Philadelphia, Pa., 1851
4. Jones, White and Co., Arch St., Philadelphia, Pa., 1851
5. Store, near 75 Chestnut St., Philadelphia, Pa., 1851
6. McDowell & Day, 99 Arch St., Philadelphia, Pa., 1852
7. Store of Samuel Townsend, 101 Arch St., Philadelphia Pa., 1852
8. Hoskins, Heiskel & Co., Market St., Philadelphia, Pa., 1852
9. Three Stores, 2nd and Little Dock Sts., Philadelphia, Pa., 1853
10. Ashmead Building, George (Sansom) St., Philadelphia, Pa., 1853
11. Thurlor, Hughes & Co., 5th St., Philadelphia, Pa., 1854
12. Wendell & Espy, 3rd St., Philadelphia, Pa., 1854
13. 'Tower Hall' (Bennett & Co.), Market St., Philadelphia, Pa., 1855
14. Washington Building, 3rd St., Philadelphia, Pa., 1856
15. Building for John Grigg, Walnut St., Philadelphia, Pa., 1856
16. Farmer's Market Co., Market St., Philadelphia, Pa., 1860
17. Samuel S. White Store, Chestnut St., Philadelphia, Pa., before 1868
18. Banking house of Elliot & Dunn, 3rd St., Philadelphia, Pa., before 1868
19. Pennsylvania Saving Fund Society, Washington Square, Philadelphia, Pa., 1868
20. Tradesman's National Bank, Philadelphia, Pa., date unknown

VII. Residential Buildings.

A. West Philadelphia.

1. Andrew M. Eastwick Villa, Bertram's Gardens, West Philadelphia, Pa., 1851 (fig. 4)
2. N. B. Browne House, Locust St., West Philadelphia, Pa., 1851
3. N. B. Browne, summer residence, Spruce and Hamilton Sts., West Philadelphia, Pa., 1851

Fig. 7. Schoolhouse. 'Plan of a schoolhouse adopted by the Board of Controllers of the Public Schools in the city and county of Philadelphia. . . .' In the latter part of the year 1850, the Board made a public bid for designs for schoolhouses; this seems to have been Sloan's entry in the competition (from *The Model Architect*).

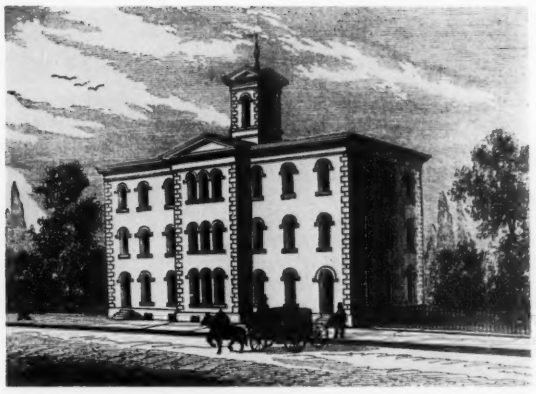

Fig. 8. The Hancock School, Coates Street, Philadelphia. This is a typical example of Sloan's schoolhouse architecture for which he was famous in the 1850s (from *Common Schools of Pennsylvania*, 1855).

4. Speculative houses for Andrew D. Cash, two on Washington Ave., eight on Oneida St., West Philadelphia, Pa., 1851
5. Eight houses on Locust St., between 39th and 40th Sts., West Philadelphia, Pa., 1851
6. Two speculative 'mansions' for S. A. Harrison, Locust St., West Philadelphia, Pa., 1851
7. J. J. Woodward House, Spruce St., West Philadelphia, Pa., 1852
8. J. L. Goddard House, adjoining that of J. J. Woodward, West Philadelphia, Pa., 1852
9. Speculative house for N. B. Browne, Spruce and 40th Sts., West Philadelphia, Pa., 1852
10. Speculative house for S. A. Harrison, adjoining that of N. B. Browne (see 9 above), West Philadelphia, Pa., 1852
11. Sexton House, Pine St., West Philadelphia, Pa., 1852
12. Malony House (Swiss cottage style), 40th St., West Philadelphia, Pa., 1853
13. S. A. Harrison Mansion (Corinthian), 40th St., West Philadelphia, Pa., 1853
14. N. B. Browne Mansion (Elizabethan), 40th St., West Philadelphia, Pa., 1853
15. James C. Vodges House, 'in the northern part', West Philadelphia, Pa., 1853
16. Five Villas for S. A. Harrison (later Hamilton Terrace), Hamilton St., West Philadelphia, Pa., 1854
17. Woodland Terrace, near Hamilton Terrace, West Philadelphia, Pa., 1861 (possibly 1855)

B. Delaware Valley.

18. Villas at Riverton, N. J., 1851–1857, for:
    a. William D. Parrish
    b. Rodman Walton
    c. Daniel K. Miller
    d. William C. Biddle
    e. Edward C. Biddle
    f. Caleb Clothier
19. Joseph Harrison, Jr. Villa, 'Riverdale', in the 26th Ward, Philadelphia, Pa., 1854

C. Center-City, Philadelphia.

20. Nine dwellings on the west side of Logan Square, Philadelphia, Pa., 1851
21. William J. Johnson House, 103 Walnut St., Philadelphia, Pa. 1851

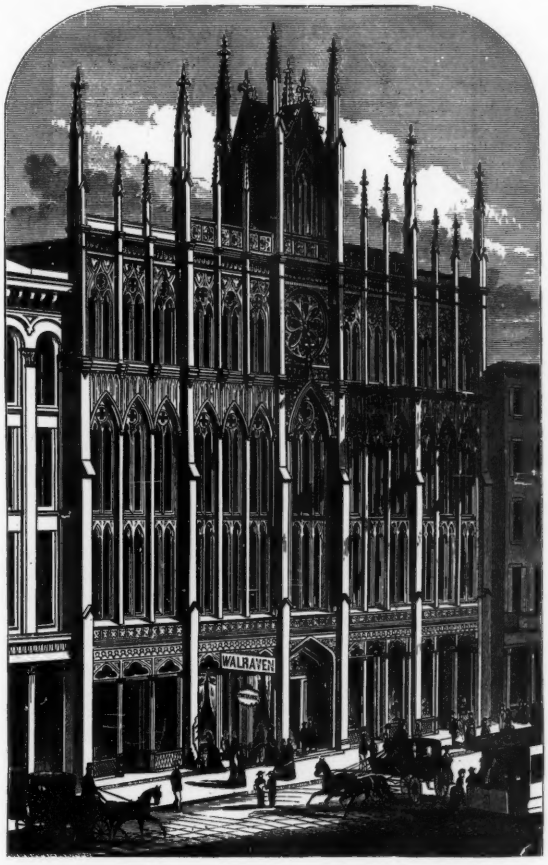

Fig. 9. Masonic Temple, Philadelphia, designed and erected by the firm of Sloan and Stewart, 1853–1855. This building is the climax of the pictorial Gothic revival in Center-City, Philadelphia, and was in its own time one of the most extravagantly admired structures in the city (from *Philadelphia and the Environs*, 1874).

22. House on the site of 'Parkinson's ice cream saloons', Chestnut St., Philadelphia, Pa., 1851
23. House (same design as No. 22), Walnut St., above 7th St., Philadelphia, Pa., 1851
24. Dr. W. Williamson House, 11th and Filbert Sts., Philadelphia, Pa., 1851
25. Joseph S. Siber (or Silver) House, Broad and Girard Sts., Philadelphia, Pa., 1851
26. Charles Stokes House, Chestnut St., Philadelphia, Pa., 1852
27. Houses for Messrs. Kimbal and Gordon, 'opposite Logan Square', Philadelphia, Pa., 1853
28. Joseph Harrison, Jr. Mansion, Rittenhouse Square, Philadelphia, Pa., 1854 (fig. 6)

D. Germantown.

29. E. K. Tryon House, Germantown Ave., Germantown, Pa. 1851
30. Robert Wright House, Indian Queen Lane, Germantown, Pa., 1852
31. Rev. Joha Richards House, 'in the vicinity' of the Wright House, Germantown, Pa., 1852

E. North Philadelphia.

32. Two houses for 'ex-Sheriff' Deal, N. Broad St., Philadelphia, Pa., 1853
33. Block of ten houses, N. Broad St., Philadelphia, Pa. 1859

F. Housing Developments.

34. Harrison's Row, 8th St., between Green and Spring Garden Sts., Philadelphia, Pa., 1853
35. Redleaf Park, Lancaster Ave., between Overbrook and Wynnwood, Pa., 1868

G. Residences outside the greater Philadelphia area.

36. Houses from *The Architectural Review*, Sloan's *Homestead Architecture*, and *The Model Architect*.
    a. Three villas from a design in *The Architectural Review* II, 453, erected in Lewisburg, Pa., Kalamazoo, and Ann Arbor, Mich., before 1867 (see *JSAH* XVIII, 3, fig. 8, p. 108)
    b. Dr. E. C. Evans House, West Chester, Pa., before 1867 (fig. 1)
    c. J. S. Winters House, Montgomery, Ala., about 1852 (fig. 2)
37. 'Longwood', house for Dr. Haller Nutt, Natchez, Miss., 1855–1862 (fig. 5)

NOTE The letters of Addison Hutton, first an employee and later a partner of Sloan, indicate that Sloan's residential commissions were perhaps two or three times the eighty-six examples listed above. It seems likely that he executed at least one residential commission in every area where he had been awarded a courthouse, hospital, school, or church.

BOOKS

Helen Rosenau, *The Ideal City: In its architectural evolution* (London: Routledge and Kegan Paul Ltd., 1959), 168 pp., 32 pls., 90 figs. 30s.

For its intention, Dr. Helen Rosenau's book on the ideal city deserves a welcome. The author is a trained art historian, whose first work, on the Cologne Cathedral, dates back to 1933. It is a happy sign to find an experienced scholar undertaking to deal with such a complex whole as the city; for art historians, like archaeologists and anthropologists, have too sedulously confined their attention to individual structures or fragments of structures; so that it is still true that the Stones of Venice are better known, so to say, than Venice itself. Apart from a few outstanding works, like those of Marcel Poëte and Pierre Lavedan, there has been little satisfactory work done on the historic side of city development; and even less on the formative aesthetic behind both the city as a whole—one might almost say the Holist City—and the individual buildings. Here the art historian has much to contribute; for the arts, from numismatics to painting, offer a rich mine of material that has hardly been prospected, much less dug out and worked up. Even the fact that Dr. Rosenau has drawn on many historic cultures for her picture of the ideal city is a welcome change from the practice of treating the ideal city as a purely Renaissance theme. Almost all that could be usefully said on that narrow subject was said by Steen Eiler Rasmussen in his admirable *Towns and Buildings*.

Though *The Ideal City* draws on a multitude of scholarly sources, some less well known than they should be, it makes, I regret to say, only a minor contribution to the subject. 'For the purpose of this study', Dr. Rosenau says at the outset, 'an ideal city represents a religious vision, or a secular view, in which social consciousness of the needs of the population is allied with a harmonious conception of artistic unity'. Unfortunately, religious vision, social consciousness, and aesthetic unity are rarely present in anything like equal amounts; and the attempt to subsume under one general head the mathematical-aesthetic exercises of the Renaissance planners with, say, the chimerical social projects of nineteenth-century utopians and the realistic proposals of an Ebenezer Howard leads to confusion rather than clarification. Dr. Rosenau passes over the one set of examples that really fulfills her definition of the ideal city, the ancient urban centers of Mesopotamia. For those cities were not merely the homes of their gods, duly enthroned in temenos, temple, and tower, but they were, as Mircea Éliade has made clear, ideal replicas of the cosmos itself. One might even say that in the ancient world the ideal city, as embodied in the temple-palace nucleus, the citadel, took precedence over the utilitarian structures that spread around it in villages and denser urban quarters.

There is indeed a connecting link between the ideal city of priest and king, concentrating and enclosing and magnifying all their powers, and the ideal city as one finds it in the platonic utopias. In both there is a tendency to express the ideal in symbolic geometrical

forms of a highly simplified order. In many schemes geometric unity is equated with architectural unity and social equality: in both the architectural and the utopian ideal a social consciousness of the needs of the population demands a readiness to be racked or cramped to fit the Procrustean bed of the geometric city form. This identification of the simple and the geometric with the ideal is a practice that in itself deserves the most searching investigation, for neither as a social principle nor as an aesthetic goal is it nearly so obvious as its practitioners have supposed. On the contrary, a certain degree of complexity has usually been associated with the highest and richest kind of aesthetic experience: no one would trade a whole metropolis of eggs-and-darts for the Panathenaic frieze. The scholar who applies himself to this problem, in all its ramifications, will make important contributions to the concept of the ideal city. Certainly utopians who had some measure of architectural consciousness found it difficult to translate social aims into urban forms. Even in the case of Hippodamus, no one has been able to indicate how his rectangular block plan or his Milesian type of agora related to the threefold commonwealth idea Aristotle attributes to him. As for social utopians like Thomas More, it is equally difficult to pass from the humanistic freedom and variety of his utopia to the planning of towns so rigidly standardized that he who knew one of them knew all.

Much as I would like to praise this work, as the first large-scale effort of its kind, duty compels me to say that it does not do justice to the scholarly qualifications of the author or the possibilities of the subject. Yet it has the virtue of a pioneer work, in that it opens the way for further exploration of an important theme. The ideal city exists in many possible dimensions, and each deserves an exhaustive investigation. First, as I have already indicated, the ideal city is essentially a religious conception; and this was once actually embodied in the temple city, in which symbol and meaning took precedence over practical needs and mundane uses. That city dissolved in eschatological clouds when the temple was destroyed and the god humiliated. But it left its imprint on religious and governmental structures right down to our own day, assigning the dominant sites, raising domes and towers above the rest of the city, commanding technological facilities the rest of the town lacked, and setting its buildings in gardens and public open spaces, whose spacious order, in time, flowed out into the rest of the city.

Still a second type of ideal city constitutes an attempt to purify and carry further in the structure of the city as a whole the kind of order made manifest in some individual building or institution. Dr. Rosenau came close to dealing with this aspect of the ideal when she introduced the conception, both fruitful and, I believe, sound, of the influence of the monastery upon the development of the mediaeval town. This was worth a monograph in itself, but unfortunately the author barely opened the subject. Sometimes this second type of ideal operates spontaneously, because all the practices of the community conspire to support it; sometimes it is consciously pursued, as in the ground plans and general order of buildings in the Roman colonization cities such as Timgad, which achieved a degree of continent order and aesthetic organization that Rome itself attained only in patches. The ideal city of the Middle Ages was a city of well-defined inner spaces and outer boundaries, but with broken roof lines and soaring spires, often with curving streets and arresting cul-de-sacs. This was no less an ideal form than the paper plan of a Baroque city with its uniform building heights, its long horizontals, its repeating columns and windows, and its avenues that retreated toward the horizon. Each moment of culture has an implicit ideal of the city that can be derived by collating a sufficient number of paper plans and actual examples. The historian who defined these aesthetic archetypes would be performing a great service both to art history and to town planning; but he can do so only if he realizes that organic forms, with their freedom, their frequent irregularity, and their slow development in time, do not stand outside the sphere of design—and that a complicated form may be in fact a more effective idealization than a square or a circle, executed in a limited span of time.

There is yet a third form of ideal city that deserves the attention of the art historian; and this is the city one catches so many teasing glimpses of on stone, canvas, or coin, an image derived from the free transposition and aesthetic idealization of the actual city, sometimes purified, sometimes highly elaborated and enriched, sometimes a mixture of fantasy and contemporary reality like the Jerusalem of so many mediaeval and renaissance paintings. How profitable would be a guidebook to the ideal mediaeval city, from Giotto and Botticelli and the illuminators to the Master of Alkmaar and Breughel: cities not merely of wood and stone but of flesh and blood. So, too, with the post-mediaeval city, as we behold it prophetically in the classic amplitude of the sixteenth-century painters, and retrospectively in the canvases of Canaletto and Guardi. Even the nineteenth-century ideal is more meaningful than most of the utopian stereotypes: that exalted inferno, made radiant by the very fog and smoke that defiled it and dissolved its forms. The painter's ideal city contains important urban features that no town plan can render and no surviving monuments recall: not just the forms and costumes of its inhabitants, but the effect of the urban form itself on the mind of a sensitive beholder. Here is a virgin field for the art historian.

These are only a few aspects of a subject that has many other facets; and one must thank Dr. Rosenau for at least calling our attention to this badly neglected field, and taking fitful samplings of the soil itself. But there is much work still to be done; and the student of cities must eagerly wait for such aid as scholars in other disciplines can give him.

LEWIS MUMFORD
Amenia, New York

Donald R. Torbert, *A Century of Minnesota Architecture* (Minneapolis: Minneapolis Society of Fine Arts, 1958), 64 pp., illus. $1.00.

We should still have a long time to wait for adequate coverage of the architecture of Alaska and Hawaii; but it would surely be a boon to American architectural history if all the newer states were to follow in sequence the excellent example of Minnesota and celebrate the centenary of their statehood by an exhibition such as was organized by the Minneapolis Institute of Arts two years ago, and accompany the exhibition with a parallel publication such as this. The exhibition was shown only in Minneapolis, in Rochester, in Winona, in St. Paul, and in Duluth. But the publication ought to be in every collection of books on American architecture; for the author has carried it out with judgment, with thoroughness, and with a piquant critical sense that looks ever forward as well as backward. This is true all the way from the initial discussion of the local Trenton limestone to the words on the future of city planning that provide the conclusion.

Many accounts of architecture in this or that American state have come to a close in the early nineteenth century or, at latest, with the Civil War. Torbert's first illustration, unbelievably romantic and even 'Old World', is of the Round Tower at Fort Snelling completed in 1820; the last is of a model of what is now the tallest building in Minneapolis, the First National Bank by Holabird, Root & Burgee (Thorskov & Cerny, associates), just begun when his text was written.

The outsider will not find very much built before the 1880s that is of particular interest. Nevertheless, the appearance of the mansard roof in St. Paul as early as 1860; the use of Asbestine, a local caststone, to sheathe the Rand House in Minneapolis in 1874; and perhaps the early flour mills and grain elevators of the 1860s may be noted here.

The current association of a nationally known firm of architects from Chicago with one of the two most prominent local firms on the First National Bank (whose design, incidentally, seems to merge the characteristics of Skidmore, Owings & Merrill's Lever House of 1952 with some of those of Mies and Johnson's Seagram Building of 1956–1958) prepares one for the fact that Minnesota, beginning in the 1880s, has employed architects of national reputation for important projects quite as often as it has local men, and that much of the work of both sorts is often derivative rather than original. Since, however, the outsiders have included, among others, Louis Sullivan; McKim, Mead & White; Frank Lloyd Wright; the Saarinens, father and son; Eric Mendelsohn; Marcel Breuer; and Philip Johnson; not to speak of Victor Gruen and Skidmore, Owings & Merrill for the sort of work at which they are specialists, local clients have certainly proved themselves to be quite bold and discriminating on many other occasions.

Among local architects, only Cass Gilbert and William Gray Purcell have had anything like a national reputation, except perhaps for the controversial case of Leroy S. Buffington. Concerning the last, I will let Torbert speak: 'Although the Buffington office designed a twenty-eight story "cloudscraper" [I may interpolate: precisely when?], which was never erected, and Leroy Buffington was granted patents on a system of iron-frame skeleton construction in 1888, there is no reason to believe that Minnesota played a part in the development of the skeleton-frame as it was employed in Chicago from 1884'.

Had Richardson not died in 1886, very possibly the story of architectural design of national significance in Minnesota might have begun with him. In 1887 James J. Hill employed Peabody & Stearns of Boston, perhaps the most accomplished of the Boston followers of Richardson, to build his mansion in St. Paul; while Buffington's Pillsbury Hall at the University of Minnesota in Minneapolis, also built in 1887, is (in Torbert's words) 'a veritable catalogue of Richardsonian forms', probably compiled by Harvey Ellis, who was a draftsman and designer in the Buffington office from 1886 to 1892.

Two larger buildings of this period are of greater intrinsic interest. Long & Kees's City-County Building in Minneapolis of 1888–1905 is the finest of the many offspring of Richardson's Allegheny County Buildings in Pittsburgh (which had just been completed the year it was begun); indeed its tower is perhaps handsomer than his. The Metropolitan Life Building of 1888–1889 derives externally from Richardson via his Chicago imitators, and none too happily at that. But its great twelve-story glass-roofed court is all but unique. Torbert calls it 'more astonishing than pleasant', but notes that the architect 'attempted to cope with the problem, essential to architecture, of designing an emotionally effective interior space'. With such local architects available it is not easy to see why Solon S. Beman should have been imported from Chicago in the same year 1888 to build the Pioneer Building, although that is quite respectably derived from the contemporary Chicago work of Burnham & Root which has always been so much admired.

The Renaissance design of the New York architects Babb, Cook & Willard's New York Life Building, also of 1888 (a relatively early instance of the use of such design for tall buildings), was taken up a little later by Long & Kees in their Farmers & Mechanics Bank of 1891. But the same firm was also responsible the next year for one of the best of the many Sullivanian skyscrapers that are not the work of Sullivan himself, the Flour Exchange completed in 1909; and presumably the Kees of Kees & Colburn, who built the even finer Great Northern Implement Building in 1910–1911, was Long's former partner. With its smooth brick corners, bold arches and cove cornice, this is surely one of the finest examples of warehouse architecture to be found in any American city. In Minneapolis, however, it is rivalled by the greater bulk and more forceful verticality of the Butler Brothers Warehouse, built by Harry Jones in 1906.

Most present-day students of architecture will appreciate that these things are more characteristically Minnesotan than are Cass Gilbert's Capitol in St. Paul, begun in 1896, and Masqueray's somewhat more boldly massed 'Beaux-Arts' cathedral there of 1906. Still more characteristic of Minneapolis and Duluth in the early twentieth century are the great concrete grain elevators that occupy so much of southeast Minneapolis and create there a gigantic geometrical landscape of close-ranged cylinders, some white, some black. Of course, similar ones also line quite as dramatically the waterfront of the great Lake Superior port, although of these Torbert identifies only the Occident Terminal in Duluth, built by the Barnett-Record Company—engineers, not architects—in 1923–1930. But he does explain, for the first time in an architectural text, how this important structural type came to Minnesota, and hence presumably to North America. As was to be expected, the source was European and almost certainly French (although Torbert does not specifically say so). In 1899 C. F. Haglin and F. T. Heffelfinger of the Pearcy Company went to Europe to investigate the use of concrete for grain elevators, and in 1901 Haglin built the initial single-cylindered one which is still standing.

Torbert lists all the Minnesota work of Purcell & Elmslie, but illustrates only the Merchants National Bank of 1911–1912 in Winona and Purcell's own house in Minneapolis of 1912, in several respects actually more characteristically Wrightian that Wright's rather exceptional Little House on Lake Minnetonka of the previous year. George Maher's J. R. Watkins plant in Winona of 1912–1913 is mentioned, and even illustrated, but not his bank there, which was perhaps his finest work (has it, by some fell chance, been demolished within the last few years?) Certainly the Foshay Tower in Minneapolis has not and, as a prominent curiosity, one would like to know its exact date and the name of its architect. The remarkable obelisk shape of this extraordinary skyscraper of the late 1920s, however, was evidently the idea of the client.

When it comes to work of the last ten years, Torbert is perhaps overgenerous in his inclusion of already well-known (or at least very characteristic) work by architects of national reputation in comparison to what he has seen fit to include by local firms. Yet he does give, nonetheless, a very fair picture of the profusion, the variety, and the high quality of current Minnesota building production in the national picture.

It will be a disappointment to some that almost no evidence of a truly regional character appears. In the past a great deal of Minnesota production has certainly differed chiefly from that of more creative areas in being provincial, and that is perhaps still not altogether untrue. On the whole, however, in terms of the chronologically short period covered and in the absence of major population centers other than the Twin Cities, the architecture of Minnesota need not fear comparison with that of other states in the West, nor even of a good many in the East and in the South. Indeed, Mr. Torbert and Minnesota might well have patted themselves still more warmly on the back without any loss of objectivity. Considering the usual intensity of local patriotism, however, which often obscures the real facts about the building history of restricted geographical areas, Torbert is to be congratulated for the discretion, indeed the actual diffidence, of his appraisals. He displays here the fruits of a very respectable, if hardly brilliant, architectural past in order better to urge upon his fellow citizens the need of realizing the great new opportunities the future must surely offer.

H. R. HITCHCOCK
Smith College

Cecil Grayson (ed.), *Alberti and the Tempio Malatestiano* (New York: Pierpont Morgan Library, 1957), 20 pp., illus. $1.50. Mediaeval and Renaissance no. 1.

The Pierpont Morgan Library could not have made a better choice of subject or author for the first in their series of Mediaeval and Renaissance Monographs. Alberti's letter of 18 November 1454 to Matteo de' Pasti, now in the Morgan Library, was last quoted, inaccurately, in 1799. It is here presented in its entirety with a brief and excellent introduction by Cecil Grayson. This famous letter with its well-known reference to the 'musica' of the Tempio Malatestiano contains Alberti's commands to his 'executor', his implied criticism of Brunelleschi, and his own intentions for the ordering of San Francesco all clearly revealed in his typically incisive prose. Although this small monograph has been in print for some time, the importance of the text of the letter, and even more important the quick marginal sketch of the volutes Alberti had intended for the façade, are deserving of greater attention. The problems of the façade explained by the architect himself not only show his intent and the inaccuracies of the Matteo de' Pasti medal, but by implication provide documentation for the freedom accorded or usurped by the executor. Problems raised by the covering of the church and discussed at length by various commentators on Alberti's architecture are finally settled by the master himself.

We are indeed fortunate to have such a key document in the study of Renaissance architecture available in the United States. One could not ask for better presentation; the letter is here published in photographic reproduction, transcription, and translation. From his intimate acquaintance with Alberti's writings, Cecil Grayson constructs a concise introduction which emphasizes the importance of the document and of the man. The Pierpont Morgan Library is to be congratulated in their choice of editor, for Grayson shows every indication of doing as much for Alberti studies in our time as Mancini and Bonucci did in the last century.

JOHN R. SPENCER
University of Florida

John Bourke, *Baroque Churches of Central Europe* (London: Faber and Faber, 1958), 289 pp., 67 pls., 7 figs. 36s.

Richard Teufel, *Vierzehnheiligen* (Berlin: H. O. Schulze, 1957), 208 pp., 105 illus. DM 27.50. Distributed in the U. S. by Wittenborn and Co., New York.

The paucity of books in English on the Baroque architecture of Central Europe is the more remarkable when one considers its current popularity in England and the United States. Sacheverell Sitwell has been all but unchallenged for the past thirty years: few will bother to explore the *Art Bulletin*, the *Journal of the Society of Architectural Historians*, the *Magazine of Art*, and the *Burlington Magazine* for the several fine articles that have appeared on this subject. Coverage in the general manuals is, with the exception of Pevsner's *Outline of European Architecture*, ridiculously slight. This statement includes the totally revised brand-new edition of Gardner's *Art through the Ages*.

John Bourke's book on these churches is, therefore, a most welcome arrival. It is extremely helpful, especially as a traveler's guide, for which it was primarily intended. Having used it this past summer in Austria, I can speak with the best argument. There is an excellent forty-page introduction to the whole subject, but otherwise the book is devoted to a description of the South German, Swiss, and Austrian churches—over two hundred of them—which fall within its general field. These are divided into larger geographical groups, subdivided into smaller ones (for example, Linz and Upper Austria), and further subdivided according to architect, when a personality is worth tracing. There are three indispensable maps on which every church is clearly located; and each description indicates the location and how it can be reached by rail or bus. The descriptions are often very full as to the history, architectural features both exterior and interior, and the ornament and furnishings of the church in question. There are elaborate cross references and comparisons to other churches, and these in turn echo and exemplify the argument of the introductory chapters.

Obviously an enormous amount of work, not to mention devotion, has gone into this book. It was ten years in the making. It started, as many good things do, as a by-product and a hobby. (The author was lecturing in another field at Munich University.) Like many others, he discovered that 'German Baroque' is a disease, among the most consuming and certainly among the pleasantest that one can acquire. And there is no end to it. Despite the exhaustive coverage offered in this book, it touches only the best and the near-best. It is not easy to find omissions, but if, for example, one takes the fascinating little book by Alois Wohlhaupter (1950) on the Brothers Dossenberger (followers of Dominikus Zimmermann in a very restricted area south and east of Ulm), one could easily add twenty churches worthy of mention. Bruno Grimschitz' superb monograph on Johann Michael Prunner (Vienna: Schroll, 1958) adds many more, in and around Linz. Without counting up the listings in the Dehio handbooks on South Germany and Austria, one can guess that the total number worth serious study exceeds a thousand.

In his foreword, Bourke modestly states that his book 'is not written by an expert or for experts'. I cannot imagine, however, an expert who could do without a copy; and the author can rest assured that he has indeed 'succeeded in passing on some of my interest and enthusiasm for these beautiful churches'. It would be merely carping to lament the absence of the churches of Czechoslovakia here, considering the present impossibility of studying them in any depth. A more serious exclusion is the palaces. Bourke rather slyly skips over this point (the book would be too big, inclusion of palaces would raise no questions fundamentally fresh, English readers can study Baroque palaces in their own country). I suspect the real reason is a matter of human endurance. If he had tried to do it all, the book would probably have never appeared.

There are certain naivetés, always charmingly expressed, as in the author's excusing himself for being so un-British as to have fallen in love with this part of the world. And there are matters of taste with which I would take exception, as in his praise of the church of Herzogenburg by Munggenast, who completed Prandtauer's abbey-church of Melk. In the description of the color of Melk (within), 'reddish ochre' might be altered to reddish apricot, or dark shrimp, and buff; and the rippling movement of the cornices is subtler than Bourke's account of it, notably in a variant in the choir. Sometimes his descriptions remain superficial and they miss the quality of the organizing mind. Exclusion of secular work inevitably shrinks the importance of major architects like Cuvilliés, whose religious commissions appear to have been limited to the original plans for Schäftlarn, south of Munich.

This admirable little book closes with discussions of stucco ornament, statuary, and frescoes, with glossaries, seven ground plans, a bibliography, and indices of persons and places.

Teufel's monograph on the pilgrimage church of Vierzehnheiligen, the masterpiece of J. B. Neumann, may be safely endorsed as a model of its kind. An enlargement and revision of the author's earlier study of this church (Berlin: Deutscher Verein für Kunstwissenschaft, 1936), it incorporates the fruits of twenty years' further research. A brief introduction is followed by an intensive analysis of the sharp rivalry between two opposing forces: Friedrich Carl, Graf von Schönborn, Bishop of Bamberg and Würzburg, Prince of the Holy Roman Empire; and Stephan Mösinger, Abbot of the Cistercian monastery of Langheim. The former, supporting Neumann, repre-

sented the most advanced taste of his day; the latter, supporting G. H. Krohne and the elderly Maximilian von Welsch, stood for the good and safe, the tried and true—and the hopelessly outmoded. The one was an enthusiastic internationalist; the other, a reactionary provincial. The outcome of their struggle, which lasted several years, was in doubt until 1744 when Neumann's revised plans won acceptance. Krohne, born in 1703 and thus sixteen years younger than Neumann, lived in Weimar, and interestingly enough was a Protestant. But he had had a long association with Langheim, and he had studied with the Mainz architect, von Welsch (1671–1745), whom the abbot now vainly tried to bring in as chief designer in a last-ditch move to oust Neumann. Bishop Friedrich Carl died in 1746, just late enough to insure his favorite's position and to know that work at Vierzehnheiligen was well under way. Most of the execution of Neumann's plans fell to J. M. Kuchel, engineer-architect at the bishop's court, and after Neumann's death in 1753 he was in full charge.

The longest section of the book is devoted to a very detailed study of all the existing plans for Vierzehnheiligen by all the architects who prepared designs for it. Much comparative material is also illustrated in the text. There follows a substantial discussion of how Neumann's plans were executed. A section of thirty-five magnificent full-page plates leads on to a general conclusion, notes, bibliography, and an appendix. It is no small achievement that Teufel has spun a human and dramatic story from this almost crushing mass of historical data.

Teufel credits Neumann with having finally established, and for the first time at Vierzehnheiligen, his independence from those many currents which had dominated Franconian architecture for the past thirty years. Thus he broke with the essential German Baroque of the Dientzenhofers and of the Viennese Lukas von Hildebrandt before them—a style also to be found in the work of Krohne, and also, of course, basic to Neumann's own formation. Even Vierzehnheiligen echoes the art of Lukas von Hildebrandt, but the echoes have gone through a process of artistic metamorphosis.

The building history of Vierzehnheiligen is most unusual. Unlike earlier eighteenth-century works, it was not designed, and its execution supervised, by a single architect. Neumann, an incredibly busy man, drew out the main scheme and his firm built the now famous wooden model, which is preserved in the Altehofhaltung at Bamberg. An associate, J. M. Kuchel, became 'building-director'. But the actual, on-the-spot supervision was carried out by a local master or artisan. Under this system, over-all control was in nice balance with the individual freedom of mason, carver, and decorator.

One is tempted to suggest that the result has certain similarities to the building of a Gothic cathedral. In small details individual fantasy was uninhibited, but the master plan embraced and guided them all. Like Neumann, the chief architect may have been *in absentia*, or, again like Neumann, he may have died long before his work was completed. Yet all of it bears the stamp of his genius.

S. LANE FAISON, JR.
Williams College

Kurt Baer and Hugo Rudinger, *Architecture of the California Missions* (Berkeley and Los Angeles: University of California Press, 1958), 212 pp., 84 pls., 6 figs. $10.00.

The text of this sepia-toned picture book was written by Kurt Baer, Professor of Art at the University of California, Santa Barbara; the photographs were prepared especially for it by Hugo Rudinger. The sincere effort of author and photographer to recapture 'something of the atmosphere of a past age' is evident throughout; yet in the preface we are told this is not a guidebook, but 'a study of mission architecture' concerned with the 'interpretation of stylistic sources' and their 'manifestations in the California buildings'. It is precisely in this regard, however, that the usefulness and quality of the book are severely limited.

Approximately half the text is devoted to architectural discussion, followed by a catalogue of individual chronologies making up the rest. The architectural discussion includes two chapter headings: 'Architectural Styles of the Missions' and 'Characteristics of the Missions'. The former is divided into sources of the styles, building materials, and architectural types (primitive, fortress, Plateresque and Baroque, Neoclassic). 'Characteristics' consist of the mission plan, arcades, belfries, the *espadaña*, the *campanario*, towers, the church nave, the choir, and sculptural decorations. This unhappy dissection results in a disconnected and repetitive discussion from which emerges no clear image of any individual mission complex or church. Nor are the various elements and details sufficiently explained by their equivalents in preceding Mexican architecture. Interesting connections regarding architects and craftsmen—for example, the master-mason at San Juan Capistrano was brought from Culiacán (p. 21)—are left unexplored.

Apparently in an attempt to make his subject palatable to wide popular taste, Baer has risked damaging over-simplifications. As to stylistic origins, for example: 'One style in Spanish and Spanish colonial architecture has endured for twenty centuries, as it has elsewhere in southern Europe: the Roman, or classical style' (p. 11); 'The first widespread reappearance of this older style occurred in the late fifteenth and the sixteenth centuries. It has been known as the Renaissance style' (p. 12); 'Just previous to the establishment of the Renaissance style, the plateresque had been popular in Spain. This was an extremely beautiful style' (p. 13). The evolution of the mission plan is summarized: 'Following a pattern set in Mexico in the early years of the Spanish occupation, the mission buildings were arranged around an open square, known as the enclosure' (p. 40).

A number of details are similarly treated without precision or proper qualification. The general term *bóveda* (vault) is loosely translated dome (p. 55). The *espadaña* (bell-cot) is called *campanario* (belfry), while curvilinear frontispieces are indiscriminately classified as *espadañas* (pp. 44–49). There is a hint, without further explanation, that these curvilinear forms descend from remote Flemish origin. Likewise, curvilinear arches are labeled either Moorish or Mudéjar, suggesting a magic transference from Moslem Spain to Franciscan California bypassing eighteenth-century Mexico, where the *arco mixtilíneo* is such an obvious stylistic feature. Although a horseshoe arch is included among the few line drawings, the author admits that the horseshoe arch did not appear in California.

The book is tedious to use because of the lack of scholarly apparatus. The text includes no references to illustrations. There is no index. There are no footnotes, although a brief paragraph credits two quotations from contemporaneous travel accounts and cites three documents in the Santa Barbara Archives. The author's slight reliance on fundamental literary sources, or his reticence in projecting them, seriously detracts from the scholarly authority of his book. Also there is no bibliography, but a 'Reading List' of eleven works on California; the larger literature and the indispensable Mexican studies of Toussaint, Kubler, and Angulo are simply not mentioned.

The illustrations are neither complete nor satisfactory. Rudinger's numerous photographs, made 'in the bromoil-transfer process which requires a great deal of arduous and exacting work', do in fact 'have the beauty of fine charcoal or crayon drawings' as advertised. However, it must be reiterated: the prime requisite of architectural photography is clarity. As to completeness, no single monument is adequately covered; yet we are treated to many views of meaningless details, unconvincing restorations, and plainly modern additions. There are no reproductions of old photographs and drawings, al-

though there are frustrating references in the text to several important ones. The line drawings include a number of details which would be more intelligible in good photographs; while accurate plans, sections, and elevations of existing monuments are totally omitted. A list of dimensions from the HABS merely suggests that another fruitful source has not been fully utilized.

The soundest part of the book is the catalogue of the seventeen existing missions. These chronologies are arranged, one discovers, as if proceeding from San Diego in the south to Sonoma in the north. The key to this arrangement is a map which appears only on the dust jacket. Each chronology concludes with careful directions for finding the mission by automobile. Finally, then, this is not the serious architectural study promised in the beginning, but a guidebook after all. It is a souvenir to bring back from one's visit to the California missions, for the book's limitations will seriously reduce its value to any who do not know the missions at first hand.

In no salient aspect does this book satisfy acceptable standards of scholarship. Yet, since it bears the imprint of an eminent university's press, one is impelled to the question: what standard of learned responsibility does such an imprint signify?

ERNEST ALLEN CONNALLY
University of Illinois

John A. H. Sweeney, *Grandeur on the Appoquinimink, The House of William Corbit at Odessa, Delaware* (Newark, Del.: University of Delaware Press, 1959), 146 pp., 35 illus., $6.00. Winterthur Series no. 1.

The house of William Corbit at Odessa, Delaware, is widely known as one of the fine American houses built on the eve of the American Revolution. This beautifully detailed monograph not only demonstrates that it is also one of the best-documented buildings of its period, but in addition makes that record readily available. The study goes far beyond a description and analysis of the building and its unusually complete related papers. The text begins with a study of the geographical, economic, social, and religious orientation of Odessa, especially in its relationship to Philadelphia. A detailed study of William Corbit provides a wealth of genealogical and biographical background material. Only then is the house itself examined, described, and placed with regard to the building traditions of the time and region.

A short chapter is devoted to interpretation of the building records, and another traces the history of the house until its presentation to the Winterthur Corporation in 1958 for operation as a house-museum and center for an educational program. Extensive appendices provide transcripts of all the major records and valuable reports on William Corbit's books and furniture. The appendix dealing with the furniture identifies, traces, and describes twenty-five pieces of Corbit's furnishings and provides illustrations of fourteen of them.

The study presents the results of exhaustive and meticulous scholarship with almost deceptive modesty. For example, one of the old traditions about the house is that the carpentry was contracted by Robert May and Company of London. On stylistic grounds Old Drawyers Church and other nearby contemporary buildings have been attributed to the same workmen. It makes a significant difference to the story of American architecture whether these distinguished buildings are considered as the work of a crew of London craftsmen or as Colonial productions. Even an intensive search of records failed to prove who Robert May was and whether his connection with the house was as contractor, artisan, designer, or all three, but it is now established that he was personally in the area at the time the house was built. Only the range of Delaware, Maryland, and Pennsylvania records cited hint at the patient search for every possible clew about who and what Robert May was. Such facts as came to light about a certain Robert May are cited and presented with great circumspection, but when it is said that no corroboration could be found of a London connection and that the conclusion drawn from all evidence is that the building is a native product, the statements carry solid conviction. Similar care and caution are characteristic of the whole study.

This book is the first of a projected series to be published as *Winterthur Series* books by the University of Delaware Press. Both this study and the publication project are outgrowths of the graduate program in early American culture carried on jointly by the Henry Francis duPont Winterthur Museum and the University of Delaware. As an example of breadth of interest and exacting scholarship this first volume of the series sets a very high standard for those to come. It provides the scholarly basis for understanding the building as a work of art and relating it to our architectural history, but beyond that, it makes the building available and understandable as a social and historical document of interest to scholars and laymen who are only incidentally concerned with art as such.

HARRY H. HILBERRY
Syracuse University

Books Received

(Mention of a book here does not preclude its subsequent review.)

P. E. Corbett, *The Sculpture of the Parthenon* (Baltimore: Penguin Books Inc., 1959), 355 pp., illus. $1.25.

John L. Cotter, *Archaeological Excavations at Jamestown Colonial National Historical Park and Jamestown National Historic Site Virginia* (Washington: National Park Service, 1959), 299 pp., 91 pls., 29 figs. $2.75. Archaeological Research Series Number 4.

Kerry Downes, *Hawksmoor* (London: A. Zwemmer Ltd., 1959), 286 pp., 96 pls., 46 figs. £6/6.

David C. Duniway, *Salem State Centennial Guide* (Salem, Ore.: David C. Duniway, 1959), 36 pp., illus. $1.00.

Mary Kane, *A Bibliography of the Works of Fiske Kimball*, edited by Frederick D. Nichols (Charlottesville: University of Virginia Press, 1959), 67 pp. $3.50. (SAH members, $2.50)

An excellent and almost complete list of the outstanding contributions of one of America's leading architectural historians.

George Kubler and Martin Soria, *Art and Architecture in Spain and Portugal and their American Dominions, 1500–1800* (Baltimore: Penguin Books Inc., 1959), 445 pp., 192 pls., 44 figs. $12.50. Pelican History of Art.

Peter and Linda Murray, *A Dictionary of Art and Artists* (Baltimore: Penguin Books Inc., 1959), 355 pp. $1.25.

Nicolas Powell, *From Baroque to Rococo: An Introduction to Austrian and German Architecture from 1580–1790* (New York: Frederick A. Praeger, 1959), 184 pp., 68 pls., 11 figs. $10.00.

Steen Eiler Rasmussen, *Experiencing Architecture* (New York: John Wiley and Sons Ltd. and The Technology Press, Massachusetts Institute of Technology, 1959), 251 pp., illus. $4.50.

George and Mary Roberts, *Triumph on Fairmount Fiske Kimball and the Philadelphia Museum of Art* (Philadelphia: J. B. Lippincott Co., 1959), 321 pp., illus. $6.00.

A fascinating journalistic account of Fiske Kimball's career which stresses the sensational aspects to such an extent that a real picture of Kimball fails to emerge.

Cornelius M. D. Thomas (ed.), *James Forte* (Wilmington, N.C.: Charles Towne Preservation Trust, 1959), 59 pp., illus. $5.00.

Homer A. Thompson, *The Stoa of Attalos II in Athens* (Princeton: The American School of Classical Studies at Athens, 1959), 32 pp., 36 pls. $.50. Athenian Agora Picture Book no. 2.

A well-produced and beautifully illustrated booklet on the controversial and almost complete reconstruction of the Stoa in the midst of the excavated Athenian Agora.

Frank Lloyd Wright, *Drawings for a Living Architecture* with essays by Giuseppe Samonà and A. Hyatt Mayor (New York: Horizon Press, 1959), 248 pp., illus. $35.00.

Paul Zucker, *Town and Square; From the Agora to the Village Green* (New York: Columbia University Press, 1959), 287 pp., 96 pls., 58 figs. $15.00.

Periodicals Received

Revista de Historia de América, Mexico City.

No. 47, June 1959.

Marsyas, New York University.

Vol. VIII, 1959.

Contains: 'Some Considerations on the Architecture of the Imperial Villa at the Piazza Armerina', by Norman Neuerburg, and one-page summaries of the following doctoral theses: 'The Church Architecture of Roussillon During the Romanesque Period', by William H. Olpp; 'The Domestic Architecture of Detlef Lienau, A Conservative Victorian', by Ellen W. Kramer; 'Studies on Buontalenti's Villas', by Webster Smith.

Journal of the Royal Society of Arts, London.

No. 5039, Oct. 1959.

No. 5040, Nov. 1959.

No. 5041, Dec. 1959.

Archivo Español de Arte, Madrid.

No. 126, Apr.–June 1959.

Contains: L. T. Balbas, 'Naves de edificios anteriores al siglo XIII cubiertas con armaduras de madera sobre arcos transversales'.

No. 127, July–Sep. 1959.

Contains: J. J. Martín González, 'El Panteón de San Lorenzo de El Escorial'; and A. B. Correa, 'El urbanismo barroco y la plaza del Obradoiro en Santiago de Compostela'.